

Universal process controller eCONTROL



- Continuous, 2-point, 3-point and On/Off control
- Ratio control function
- Sensor inputs (4...20 mA, 0...10 V, frequency, Pt100)
- Control of proportional, process and motor valves
- Bürkert proportional valves and flow meters are memorized
- 1/16 DIN size panel version

Type 8611 can be combined with...



Type 6223

Proportional Valve



Type 2301+8696

Globe control valve system



Type 8012

INLINE flowmeter



Type 8316

Pressure transmitter
4...20 mA



Type TST001

Resistance thermometer



Type 8222

neutrino conductivity meter

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 none-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 analog inputs; a standard signal (4...20 mA/0...10V), frequency or Pt100 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 medias.

Fields of application:

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

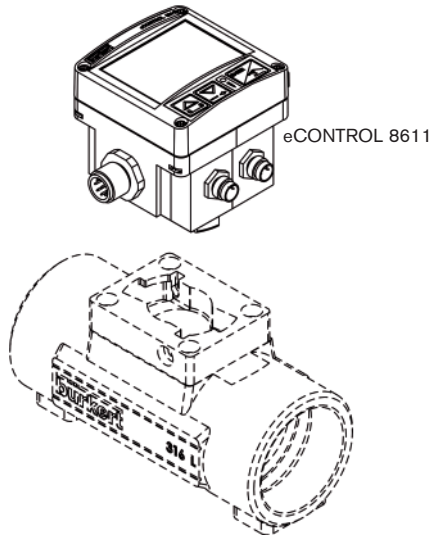
| General data | |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Materials | Housing, cover Front panel folio / Screws Multipin Wall-mounting holder |
| | PC, +20% glass fibre Polyester / Stainless steel CuZn, nickel-plated PVC |
| Display | Dual-line 8-digit LCD with backlight |
| Electrical connections | Multipin: M12-8pin, M8-4pin, M8-3pin Terminals Insert for connecting to components according to DIN EN 175301-803 |
| Voltage supply cable | 0.5 mm ² max. cross section, max. 100 m, shielded |
| Environment | |
| Ambient temperature | 0...+70°C (operating and storage) |
| Relative humidity | ≤ 80%, without condensation |
| Height above sea level | max. 2000 m |
| Standards and approvals | |
| Protection class | IP65 |
| Standard | EMC, CE |
| | EN 61326 |

| Electrical data | |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating voltage | 24 V DC \pm 10%, filtered and regulated |
| Power consumption | approx. 2 W (without valve - without sensor input) |
| Input | |
| Setpoint | Sourcing mode |
| Standard 4...20 mA | 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 | Sourcing mode |
| Standard 4...20 mA | 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°C Measuring current: 1 mA Measuring error: < 0.5°C |
| Binary input | Input impedance: 10 k Ω Operating threshold: 3...30 V Max. frequency: 1 kHz |
| Outputs | |
| 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 ^{*)} or PTM ^{*)} signal Control frequency 20 Hz...9999 Hz resolution max.: 16 Bit (depend from 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 |
| Power supply sensor / actuator | 24 V DC, max. 1 A |
| Total load of all outputs | max. 1.5 A |
| Controller modes | PI-Control, 2 point and 3 point, cascaded Up to 2 Binary out with windows and hysteresis mode |

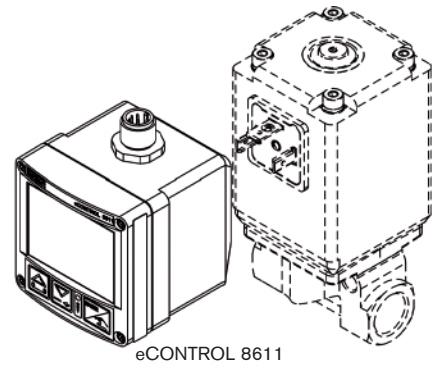
^{*)}PWM = pulse width modulation
PTM = pulse time modulation

Assembly versions

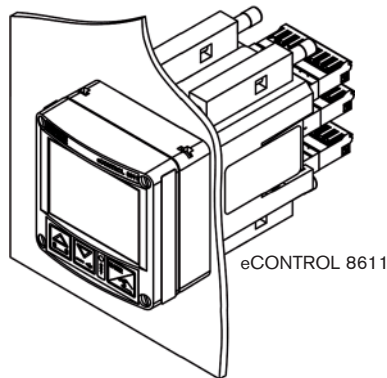
Mounting on flow-fitting
eCONTROL Fitting-mounting



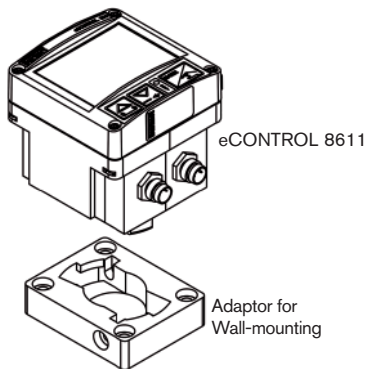
Mounting on a proportional valve
eCONTROL Valve-mounting



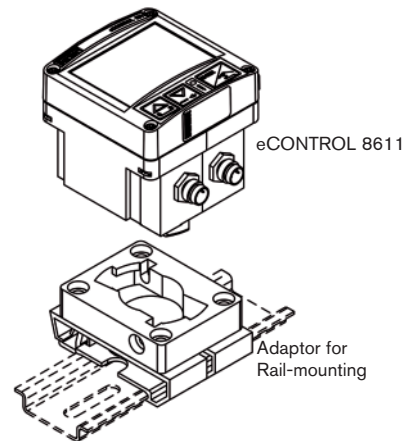
Mounting in panel
eCONTROL Panel-mounting



Mounting on a wall
eCONTROL Wall-mounting

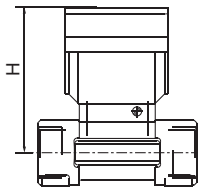
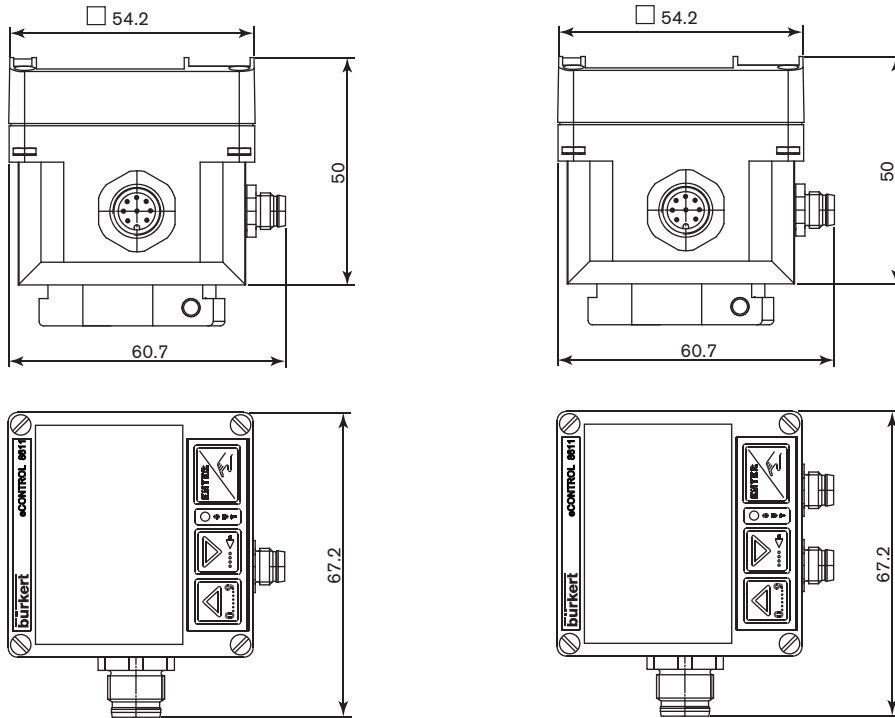


Mounting on a rail
eCONTROL Rail-mounting



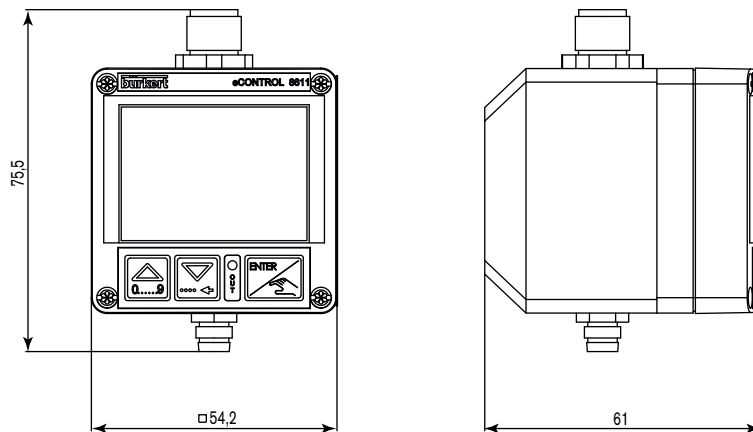
Dimensions [mm]

8611 - eCONTROL Fitting-mounting



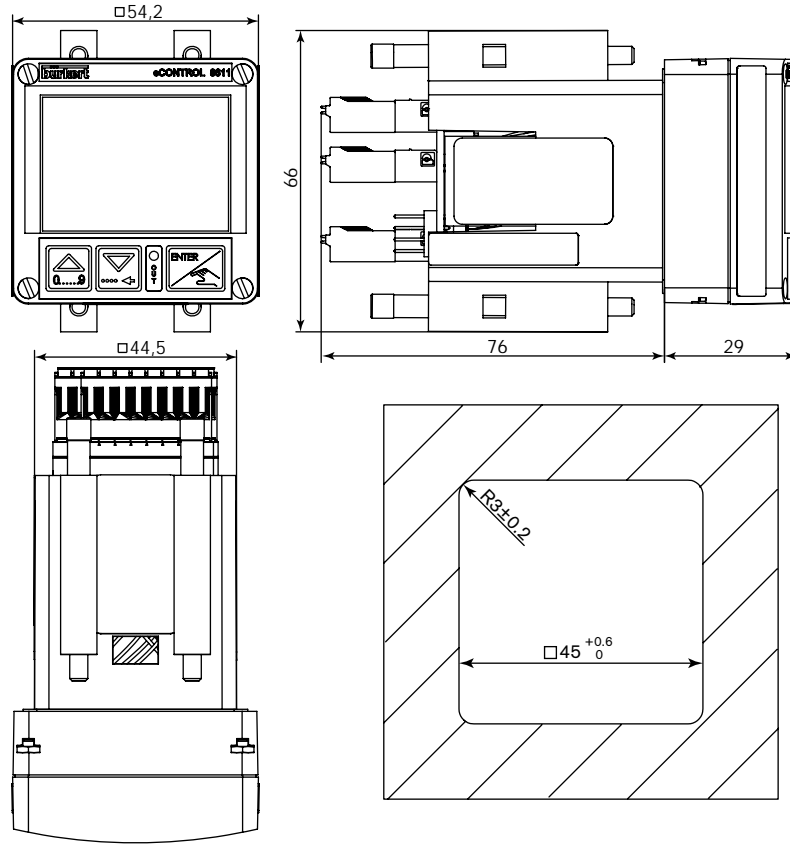
| DN [mm] | H [mm] |
|---------|--------|
| 06 | 79.5 |
| 08 | 79.5 |
| 15 | 84.5 |
| 20 | 82.0 |
| 25 | 82.2 |
| 32 | 85.8 |
| 40 | 89.6 |
| 50 | 95.7 |
| 65 | 98.7 |

8611 eCONTROL Valve-mounting

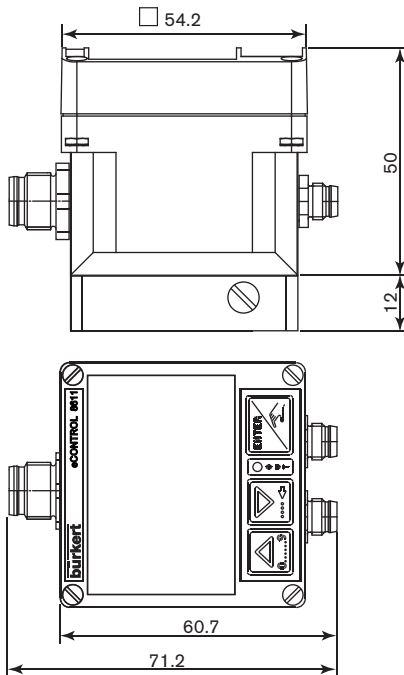


Dimensions [mm] (continued)

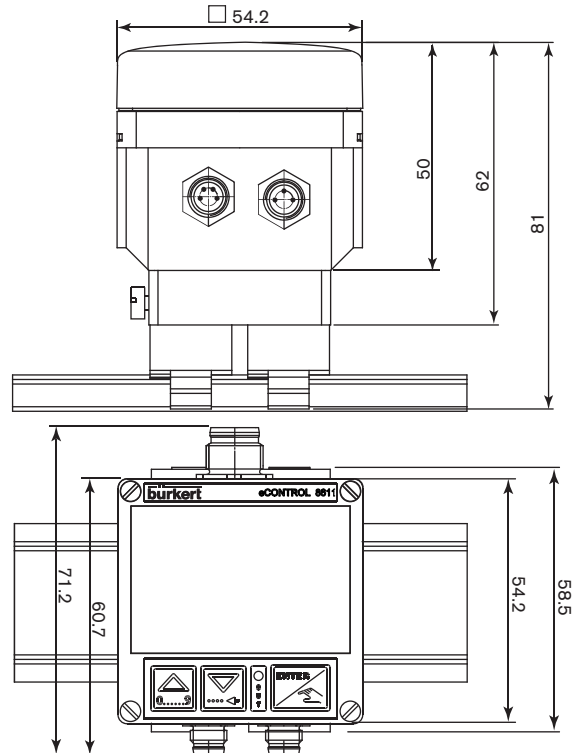
8611 eCONTROL Panel-mounting







8611 eCONTROL Wall-mounting

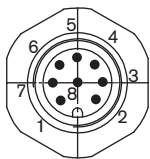


8611 eCONTROL Rail-mounting



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 | 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 | <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 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



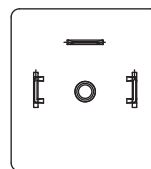
3-pin M8 plug

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



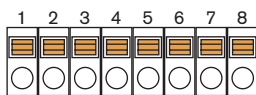
4-pin M8 plug

- 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 Item no. 182 383)

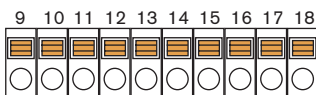


DIN 175301-803

- PWM output for Solenoid control valve



Terminal block 1



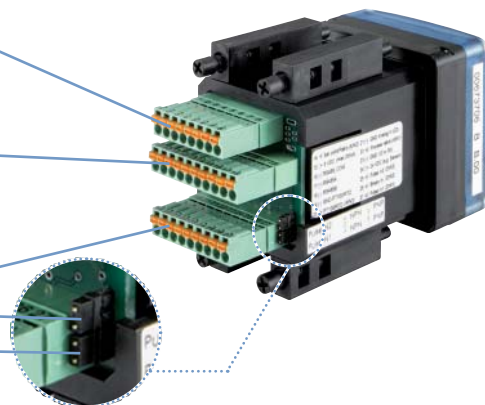
Terminal block 2



Terminal block 3

Jumper 1 (NPN/PNP)

Jumper 2 (NPN/PNP)



Ordering chart for universal Controller Type 8611

A controller Type 8611 consists of:

for Fitting-mounting

- an electronic module 8611
- an INLINE fitting S030 (DN06 - DN65)

(Refer to corresponding data sheet

- has to be ordered separately)

for Wall-mounting

- an electronic module 8611
- a wall-mounting adaptor (included)

for Rail-mounting

- an electronic module 8611
- a rail-mounted adaptor (included)

for Valve-mounting




- an electronic module 8611
- a proportional valve


(Refer to corresponding data


sheet of the proportional valve - has to be ordered separately

for Panel-mounting

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


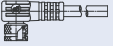
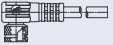
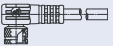
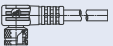



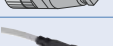
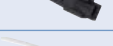


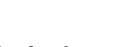
| Mounting disposition | Sensor input | | controller outputs (*) | | Operating voltage | Setpoint setting | Process value output | Binary In/Out | Item no. |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------|--------------------------|------------------------|-----------------------|-------------------|-----------------------|---------------------------|---------------------------|----------|
| | externe | interne | | | | | | | |
|  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 | 177 455 |
| | 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 | 177 458 |
| | 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 | 177 463 |
| | 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 | 208 048 |
| | | | 4...20 mA 0...10 V | - | 24 V DC | 4...20 mA 0...10 V | - | 1 x Bin In 1 x Bin Out | 567 181 |
|  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 | 177 454 |
| | 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 | 177 457 |
| | 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 | 177 462 |
| | 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 | 182 383 |
|  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 | 177 091 |
| | 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 | 177 456 |
| | 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 | 177 460 |

| Mounting disposition | Sensor input | | controller outputs | Setpoint setting | Process value output | Binary In/Out | Item no. |
|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------|--|--------------------|-----------------------|-----------------------|---------------------------|----------|
| | externe | | | | | | |
|  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 | 204 642 |
| | 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 | 204 639 |
| | 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 | 186 289 |

| Mounting disposition | Sensor input | controller outputs | Setpoint setting | Process value output | Binary In/Out | Item no. |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------|-----------------------|----------------------------|---------------------------|----------|
|  Panel | 2 x Frequency (NPN/PNP) 1 x 4...20 mA / 0...10 V 1 x Pt100 Ratio control | 1 x PWM 2x PTM 1x 4...20 mA/0...10 V | 4...20 mA 0...10 V | 4 ...20 mA (*) 0...10 V | 1 x Bin In 2 x Bin Out | 210 206 |

* 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.

Ordering chart for accessories (has to be ordered separately)

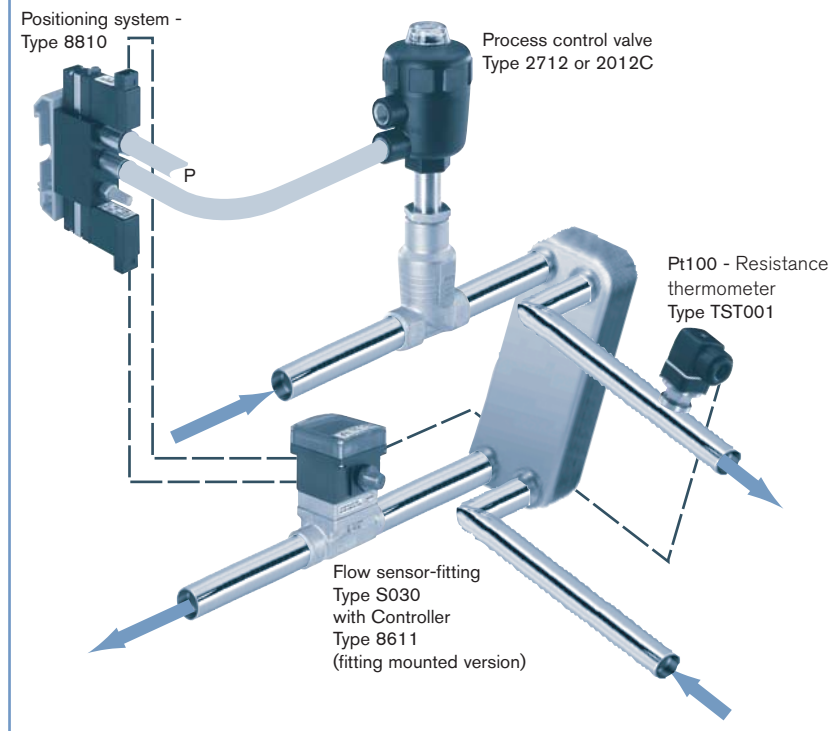
| | Description | Item no. |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------|
|  | Positioning system 8810 for pneumatic actuators with rail-mount adaptor | 204 458 |
|  | 4-pin M8 female right angle connector with self-locking threaded joint and 2 m molded cable (valve output) | 918 718 |
|  | 4-pin M8 female right angle connector with self-locking threaded joint and 5 m molded cable (valve output) | 919 412 |
|  | 3-pin M8 female right angle connector with self-locking threaded joint and 2 m molded cable (sensor input) | 918 717 |
|  | 3-pin M8 female right angle connector with self-locking threaded joint and 5 m molded cable (sensor input) | 919 410 |
|  | 4-pin M8 female connector, straight with snap-on connection and 2 m molded cable (valve output) | 919 060 |
|  | 3-pin M8 female connector, straight with snap-on connection and 2 m molded cable (sensor input) | 918 039 |
|  | 8-pin M12 female connector, straight with screw connection and 2 m molded cable (PUR) (Power supply) | 919 061 |
|  | 8-pin M12 female connector, straight with screw connection, to assemble (Power supply) | 918 998 |
|  | 2-pin female connector, straight with 3 m cable (for connection to Positioning system 8810) | 133 486 |
|  | 2-pin female connector, straight with 5 m cable (for connection to Positioning system 8810) | 167 494 |
|  | 2-pin female connector, straight with 0.3 m wire (for connection to Positioning system 8810) | 644 068 |
|  | 2-pin female connector, straight with 0.6 m wire (for connection to Positioning system 8810) | 162 144 |

Ordering chart for spare parts (has to be ordered separately)

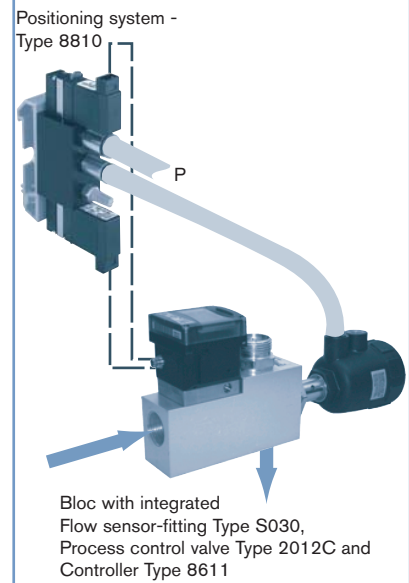
| | Description | Item no. |
|-------------------------------------------------------------------------------------|-------------------------------------|----------|
|  | Wall-mounting adaptor | 427 098 |
|  | Rail-mounting adaptor | 655 980 |
|  | Mounting brackets (Set of 4 pieces) | 560 225 |

Examples of applications

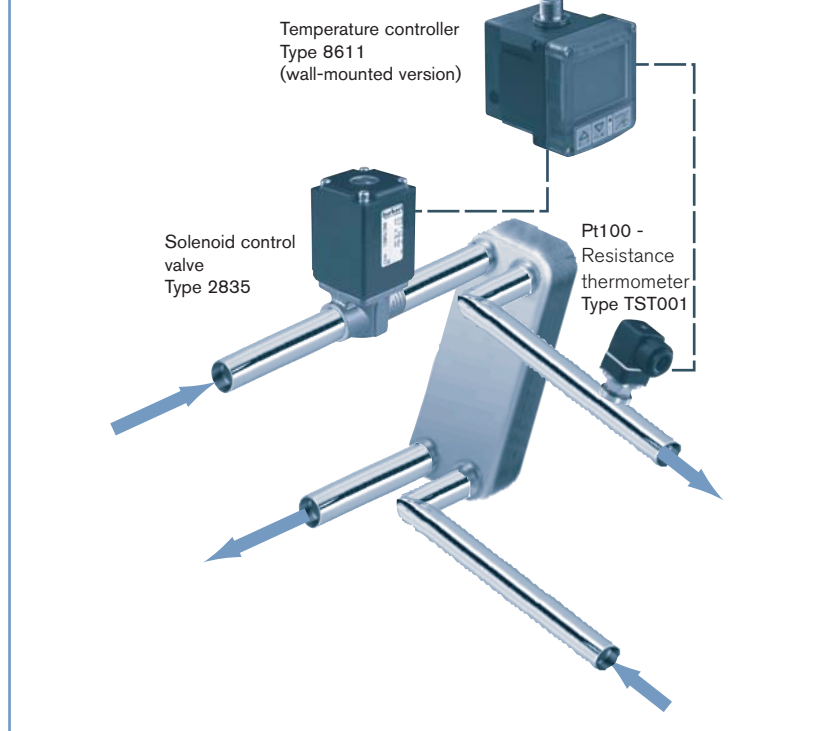
Cascaded temperature control with process control valve



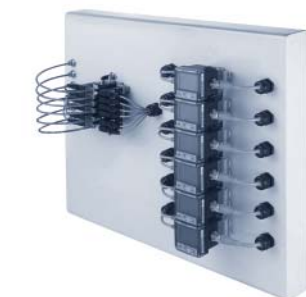
Flow control with process control valve



Temperature control with solenoid control valve



Multi channel solution with process control valve



with solenoid control valve



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In case of special application conditions, please consult for advice.

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