

Universal process controller eCONTROL



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

- 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

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...10 V), 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 mm² 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

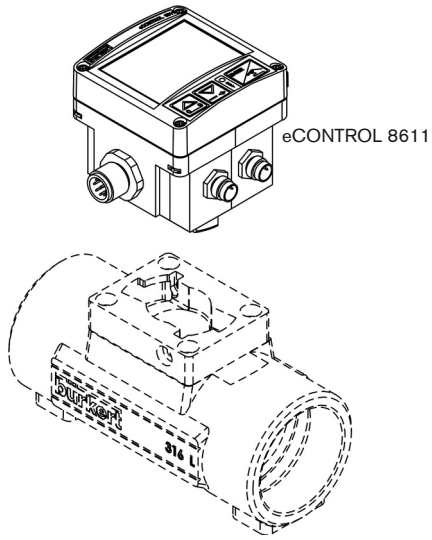
| Electrical data | |
|--------------------------------|--|
| Operating voltage | 24 V DC \pm 10%, filtered and regulated |
| Power consumption | approx. 2 W (without valve - without sensor input) |
| Input | |
| Setpoint | Sourcing mode |
| Standard 4 ... 20 mA | Max. input impedance: 70 Ω Resolution: 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 $^{\circ}$ 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 |
| 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

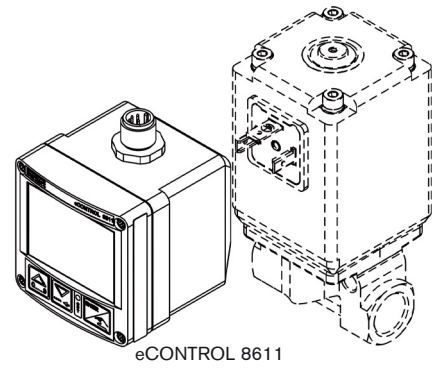
PTM = pulse time modulation

Assembly versions

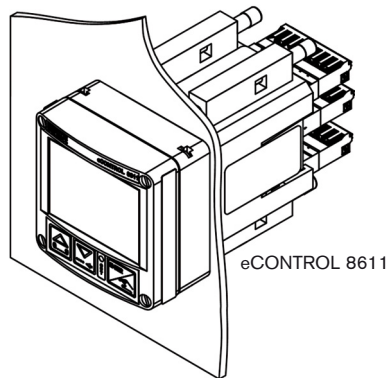
Mounting on flow-fitting
eCONTROL Fitting-mounting



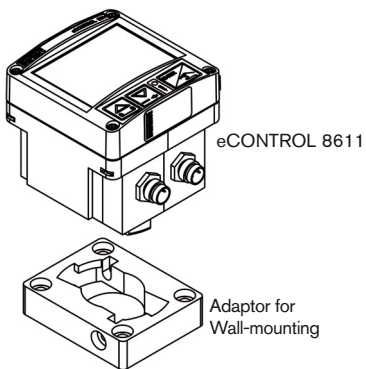
Mounting on a proportional valve
eCONTROL Valve-mounting



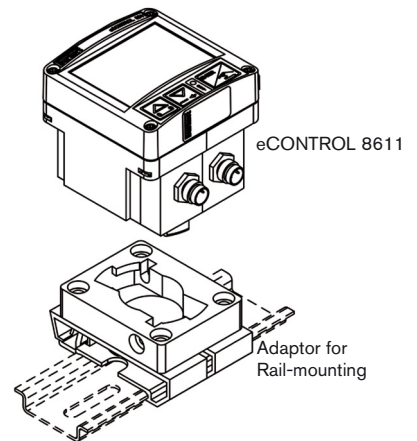
Mounting in panel
eCONTROL Panel-mounting



Mounting on a wall
eCONTROL Wall-mounting

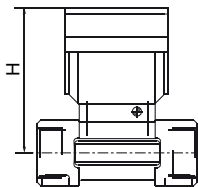
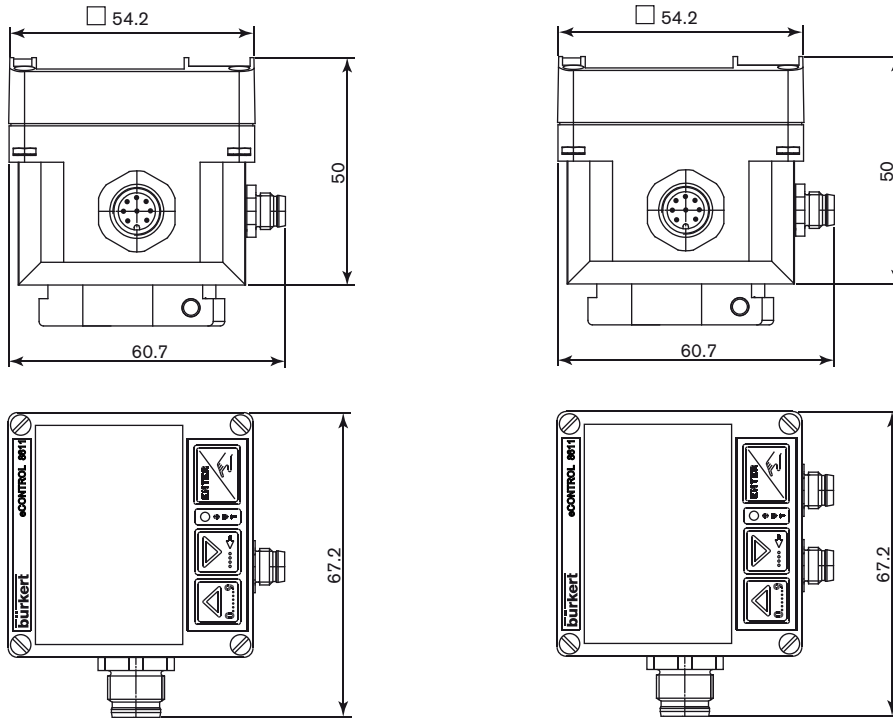


Mounting on a rail
eCONTROL Rail-mounting



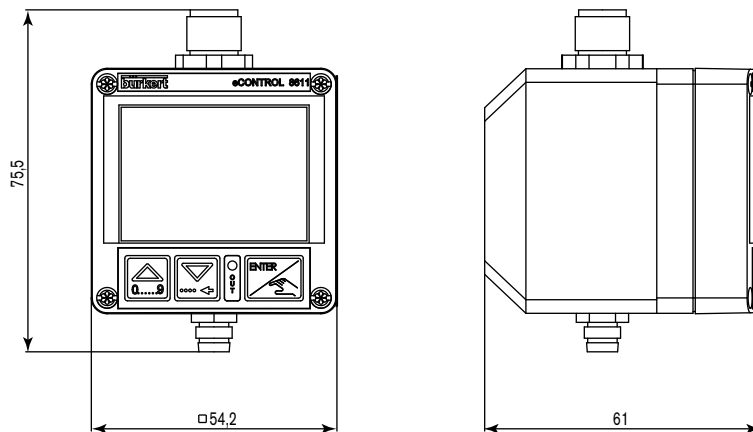
Dimensions [mm]

8611 - eCONTROL Fitting-mounting



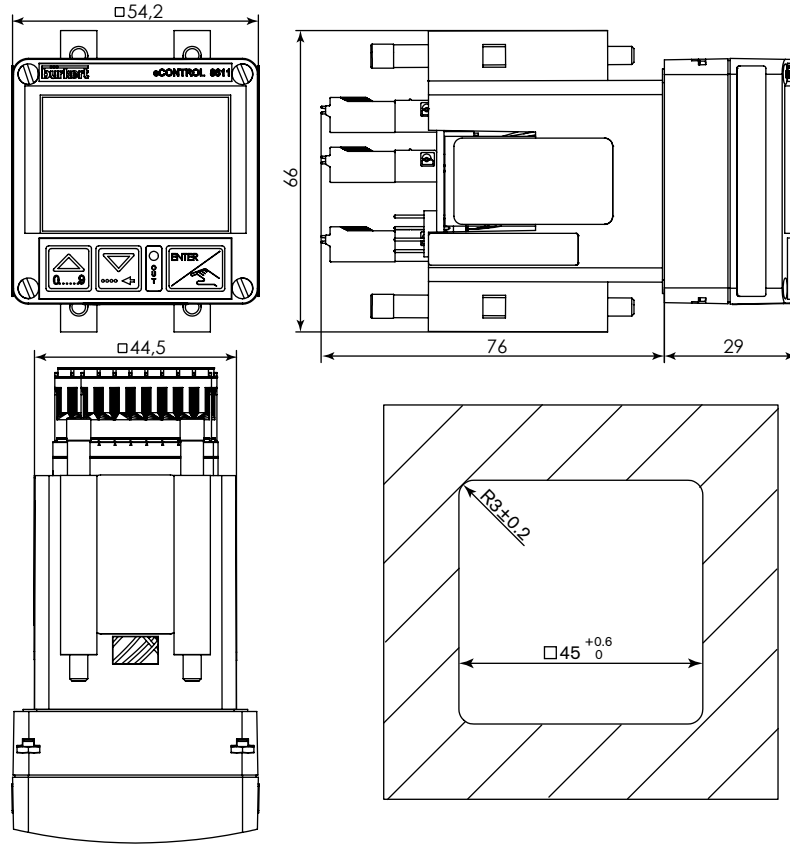
| DN [mm] | H [mm] |
|---------|--------|
| 06 | 79.5 |
| 08 | 79.5 |
| 15 | 84.5 |
| 20 | 82.0 |
| 25 | 82.2 |
| 32 | 85.8 |
| 40 | 89.6 |
| 50 | 95.7 |
| 65 | 98.7 |

8611 eCONTROL Valve-mounting

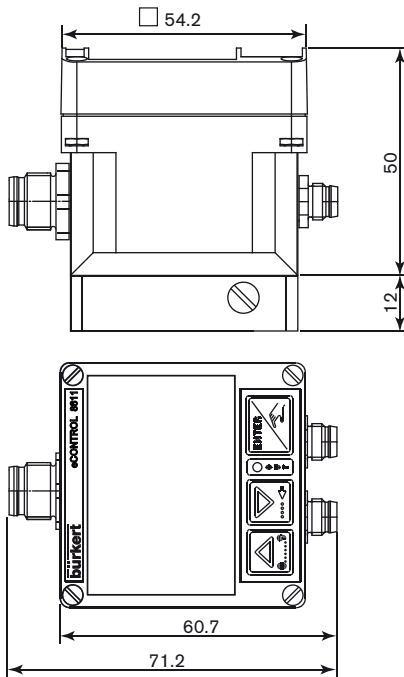


Dimensions [mm] (continued)

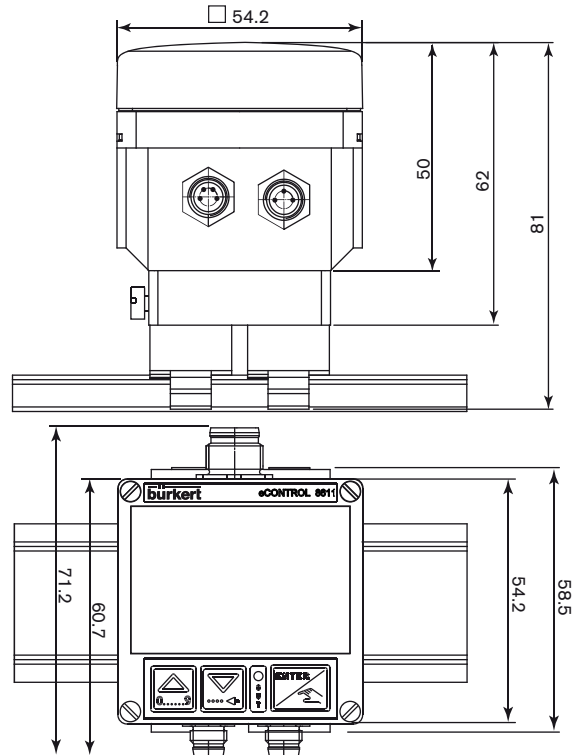
8611 eCONTROL Panel-mounting



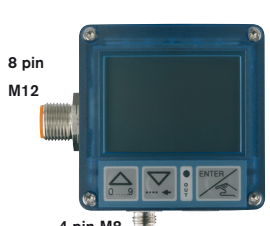
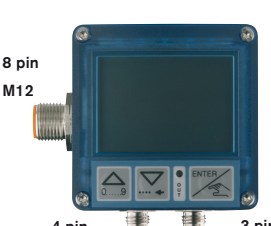


8611 eCONTROL Wall-mounting

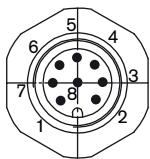


8611 eCONTROL Rail-mounting



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



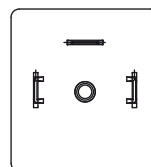
3 pin M8 plug

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



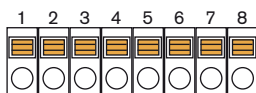
4 pin M8 plug

- 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 Article no. 182 383)

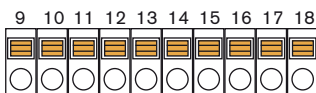


DIN 175301-803

PWM output for Solenoid control valve



Terminal block 1



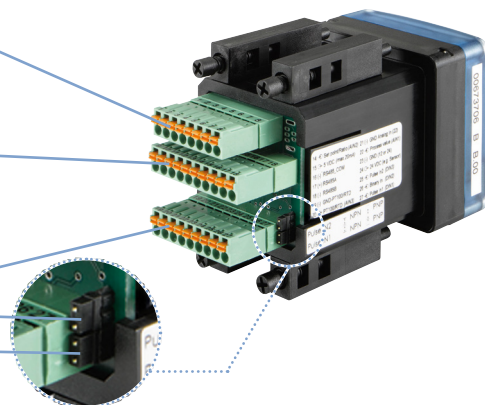
Terminal block 2



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 | Article no. |
|---|---|---|---|---|-------------------------------|---------------------------|--|---------------------------|--|
| | externe |  |  |  | | | | | |
|  | - | 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  |
|  | 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  |
| Mounting disposition | Sensor input | | controller outputs | Setpoint setting | Process value output | Binary In/Out | Article no. | | |
| | externe |  | | | | | | | |
|  | 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 | Setpoint setting | Process value output | Binary In/Out | Article no. | | |
|  | 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 (*) 0 ... 10 V | 1 x Bin In 2 x Bin Out | 210206  | | |

* 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)

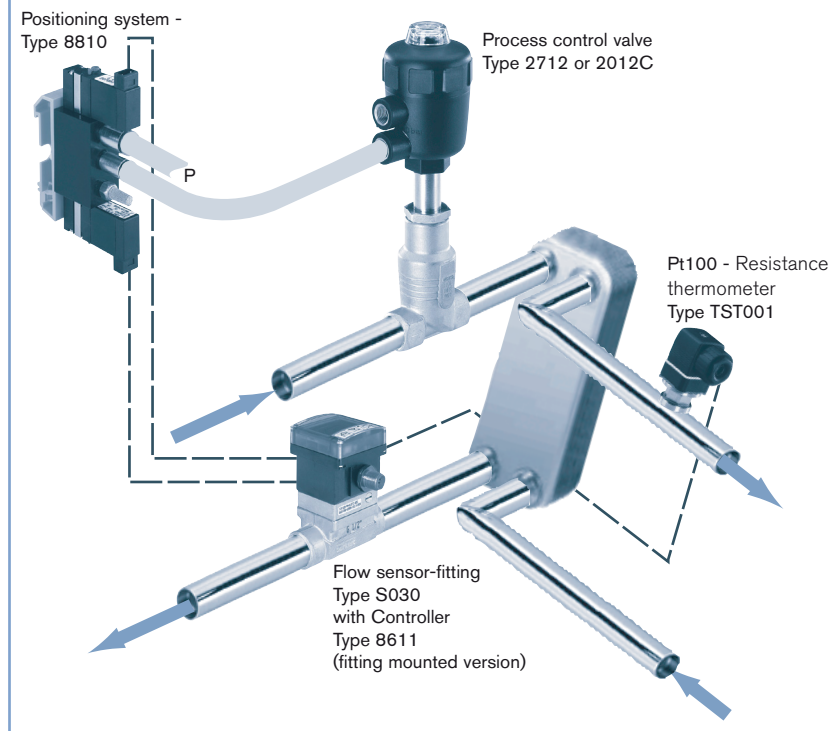
| | Description | Article no. |
|---|--|--|
|  | Positioning system 8810 for pneumatic actuators with rail-mount adaptor | 204458  |
|  | 4 pin M8 female right angle connector with self-locking threaded joint and 2 m molded cable (valve output) | 918718  |
|  | 4 pin M8 female right angle connector with self-locking threaded joint and 5 m molded cable (valve output) | 919412  |
|  | 3 pin M8 female right angle connector with self-locking threaded joint and 2 m molded cable (sensor input) | 918717  |
|  | 3 pin M8 female right angle connector with self-locking threaded joint and 5 m molded cable (sensor input) | 919410  |
|  | 4 pin M8 female connector, straight with snap-on connection and 2 m molded cable (valve output) | 919060  |
|  | 3 pin M8 female connector, straight with snap-on connection and 2 m molded cable (sensor input) | 918039  |
|  | 8 pin M12 female connector, straight with screw connection and 2 m molded 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  |

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

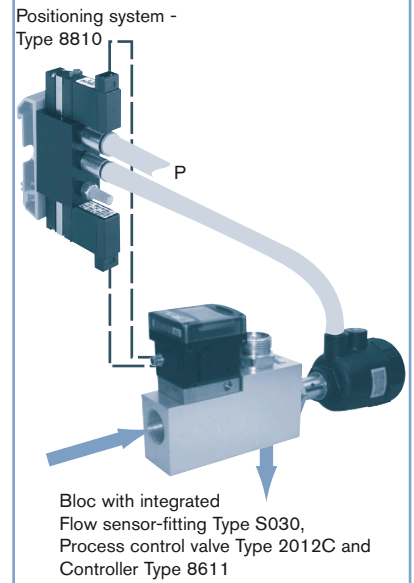
| | Description | Article no. |
|---|-------------------------------------|--|
|  | Wall-mounting adaptor | 427098  |
|  | Rail-mounting adaptor | 655980  |
|  | Mounting brackets (Set of 4 pieces) | 560225  |

Examples of applications

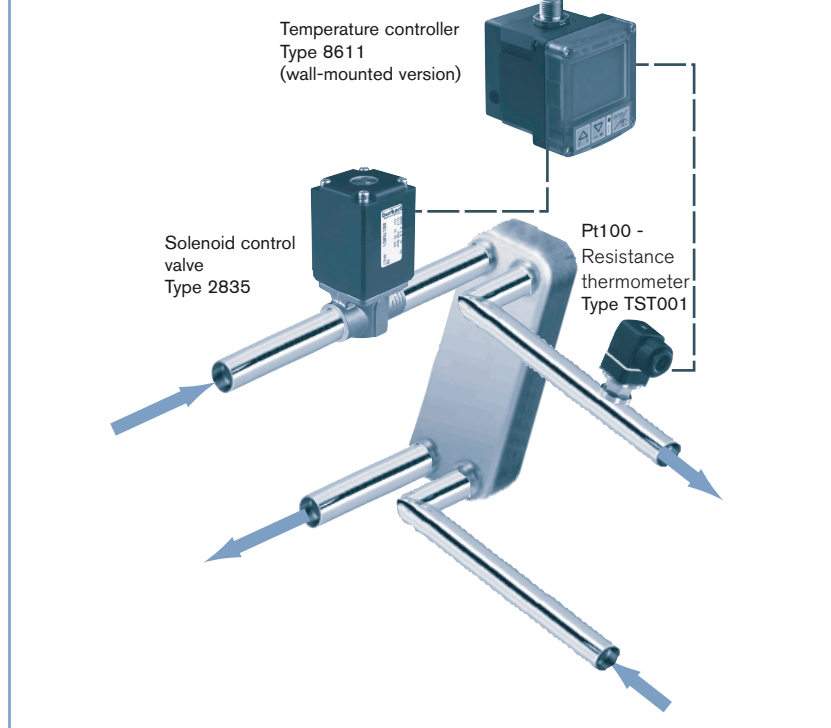
Cascaded temperature control with process control valve



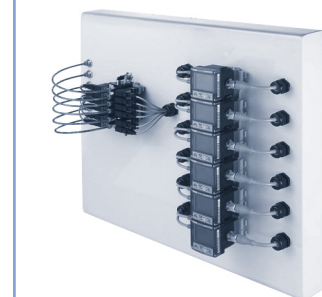
Flow control with process control valve



Temperature control with solenoid control valve



Multi channel solution with process control valve



with solenoid control valve



DTS 1000089169 EN Version: S Status: RL (released | freigegeben | valide) printed: 13.03.2018

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

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