

# R206C-1



Energy  
Management

## Compact differential pressure controller

Datasheet  
0972EN 03/2023



Balancing valve R206C-1 is a differential pressure controller for constant differential pressure of part of the hydraulic circuit at any flow rate.

Setting of nominal differential pressure ranges between 5÷30 kPa ("L" - Low) or 25÷60 kPa ("H" - High) depending on the versions. Nominal set point preset on minimum value. The setting value must comply with the presetting diagrams.

The valve comes with a 1 m capillary tube made of copper for connection to the delivery pipe, which is typically static balancing valve (R206B).

Valve R206C-1 is recommended for balancing of variable flow rate systems, such as systems with thermostatic valves or manifolds controlling multiple zones of the house.

### ➤ Versions and product codes

PRODUCT CODE	DN	CONNECTIONS	Δp SETTING RANGE
R206CY223	15	Rp 1/2"	"L" 5÷30 kPa
R206CY224	20	Rp 3/4"	
R206CY225	25	Rp 1"	
R206CY233	15	Rp 1/2"	"H" 25÷60 kPa
R206CY234	20	Rp 3/4"	
R206CY235	25	Rp 1"	

#### Accessories

- **P206Y001:** probe holders for pressure outlets to determine the balancing valve flow.
- **P206Y011:** probe holders with adjustable fitting for pressure outlets to determine the balancing valve flow.
- **R225EY001:** digital pressure gauge to read the differential pressure and set the flow for hydronic system balancing. Includes two M10 x 1 mm needle probes with the required connection pipes.

#### Spare parts

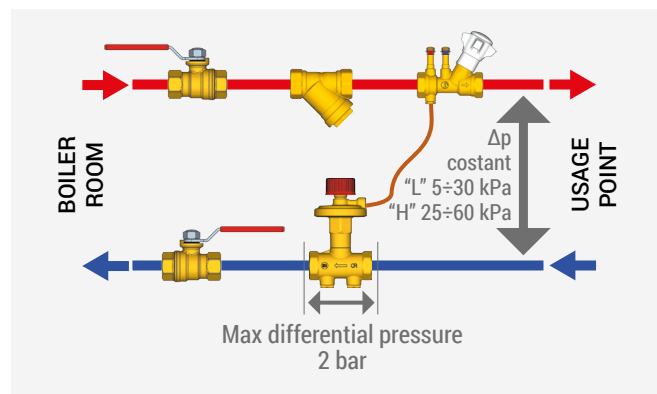
- **P206CY111:** replacement capillary tube for valve R206C-1, length 1 m.



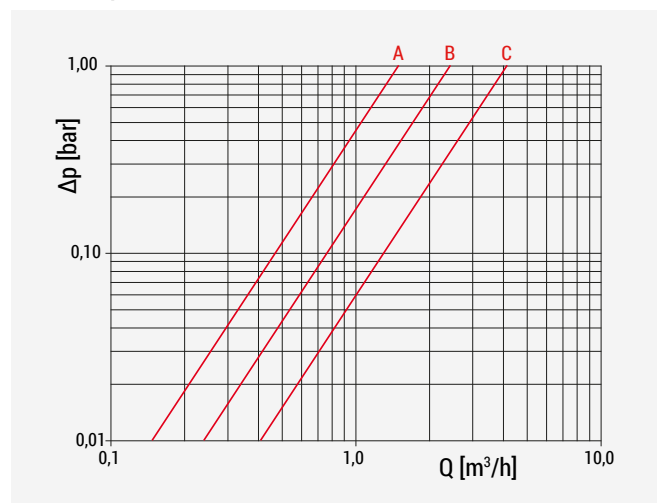
## Technical data

### Technical characteristics

- Fluids: water, glycol-based solutions (max. 50 % of glycol)
- Temperature range: 5÷110 °C (-20÷110 °C with glycol antifreeze)
- Max. working pressure: 25 bar
- Max. differential pressure: 2 bar
- Max. differential pressure on membrane (with capillary tube disconnected): 5 bar
- Differential pressure range:
  - "L" = 5÷30 kPa
  - "H" = 25÷60 kPa
- Connections for pressure outlets: G 1/4" F
- Connection for capillary tube: G 1/8" F



### Losses of pressure



### Materials

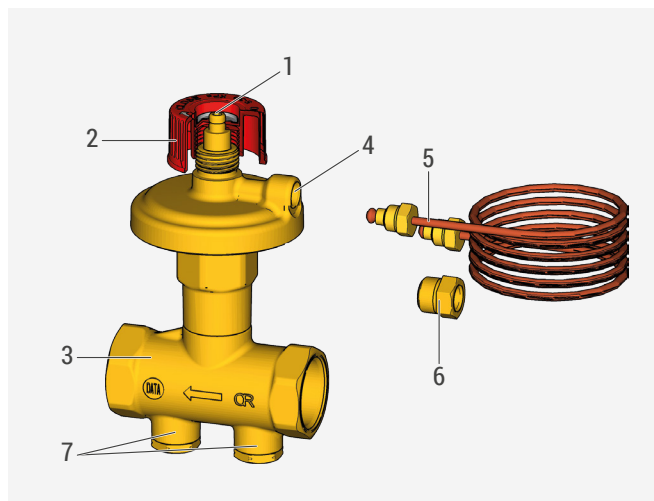
- Body: anti-dezincification brass (DZR) EN12165 - CW602N
- Other components: brass EN12165 - CW617N
- Membrane: EPDM co-molded with AISI 304 stainless steel
- O-Ring: EPDM
- Spring: AISI 302 stainless steel
- Knob: PA 66 GF20
- Capillary tube: copper

**⚠ WARNING.** The valve is suitable for installation in indoor rooms and boiler rooms, and use with non-aggressive fluids (water, glycol-based water complying with VDI 2035/ÖNORM 5195).

REFERENCE	PRODUCT CODE	Kv
A	R206CY223 R206CY233	1,55
B	R206CY224 R206CY234	2,40
C	R206CY225 R206CY235	4,15

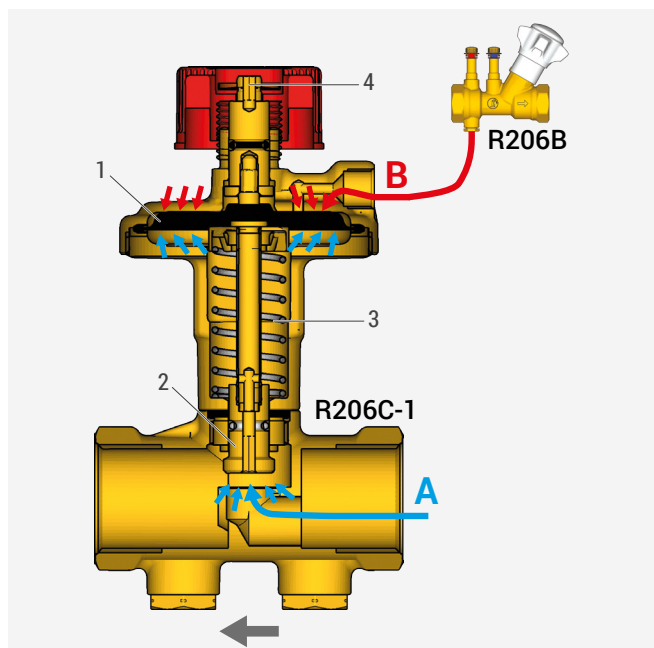


## Components



- |   |   |
|---|---|
| 1 | Setting socket-head screw   |
| 2 | Shut-off knob   |
| 3 | Valve body  |
| 4 | Connection to copper capillary tube   |
| 5 | Copper capillary tube with 1/8"M connection   |
| 6 | Adapter for copper capillary tube 1/8"F x 1/4"M, for connection to static balancing valve R206B |
| 7 | Pressure outlets  |

## Operation



- |   |  |
|---|--|
| A | Return pipe water pressure   |
| B | Pressure of delivery pipe water rechanneled through capillary pipe |
| 1 | Membrane   |
| 2 | Stopper  |
| 3 | Spring   |
| 4 | Setting socket-head screw  |

The hydraulic circuit is controlled by combining two valves: a static balancing valve (R206B) and a differential pressure controller (R206C-1).

The static balancing valve on the delivery circuit is set on the project max. pressure and connected to the differential pressure controller on the return circuit through the copper capillary tube.

This enables the valve to maintain constant the project differential pressure previously set for the concerned part of the system.

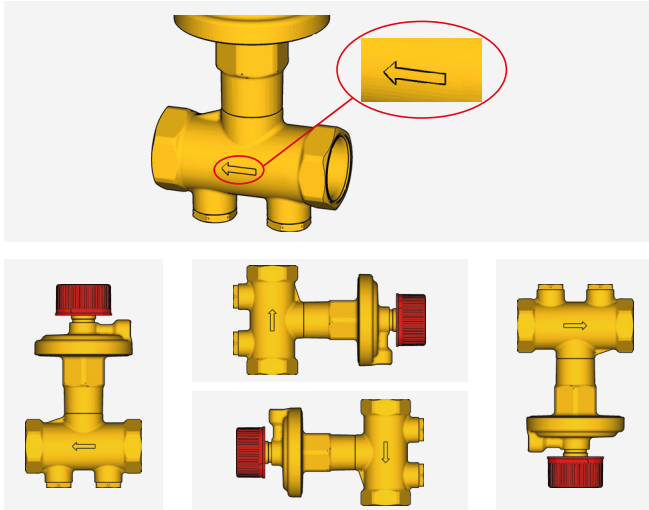
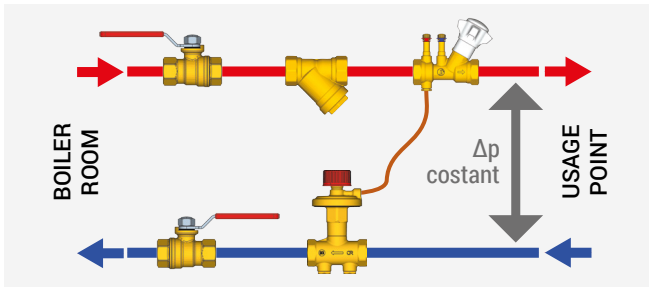
The membrane (1) activates the stopper (2) as a result of the two contrasting forces: from the bottom, the water pressure in the return pipe (A) and the spring (3) which tend to open the valve; from the top, the water pressure in the delivery pipe rechanneled by the capillary tube (B) which tend to close the valve.

The opening and/or closing movement of the stopper depends on the value set upon installation by means of the socket-head screw (4).

**NOTE.** Refer to paragraph "Presetting" to change the presetting.



## ➤ Installation



## ➤ Shutting off

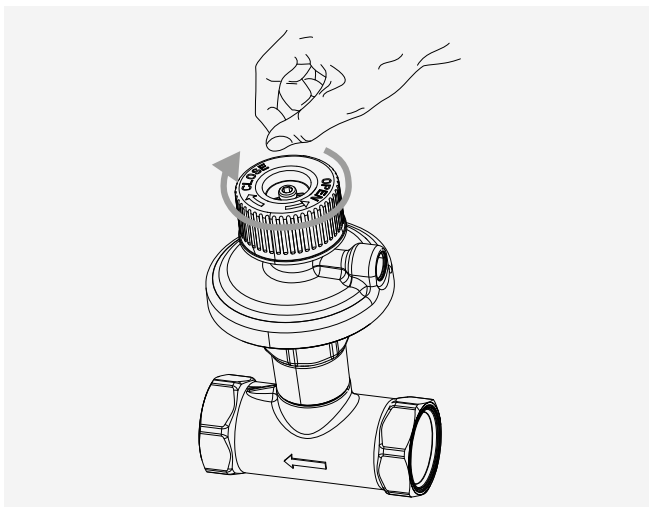
Valve R206C-1 can be closed by turning the top red knob completely in clockwise direction.

In Fully Closed position, the inner stopper shuts the passage preventing the flow from running through the valve.

**⚠ WARNING.** Differential pressure control is deactivated when the valve is fully closed.

**⚠ WARNING.** If the knob is completely closed and regular operation of the valve is required, open the knob completely.

If the stopper is not fully open, the valve will not work properly.



## Installation instructions

Install valve R206C-1 on the delivery pipe according to the flow direction shown on the body valve and connect it to the delivery pipe with the capillary tube.

We recommend installing a shut-off valve both upstream and downstream, in addition to a filter to stop debris.

Valve can be installed in any direction (horizontally and/or vertically).

## Air venting of capillary tube

When starting the system, vent the air from the capillary tube. To carry out this operation, screw the capillary tube on valve without tightening it completely.

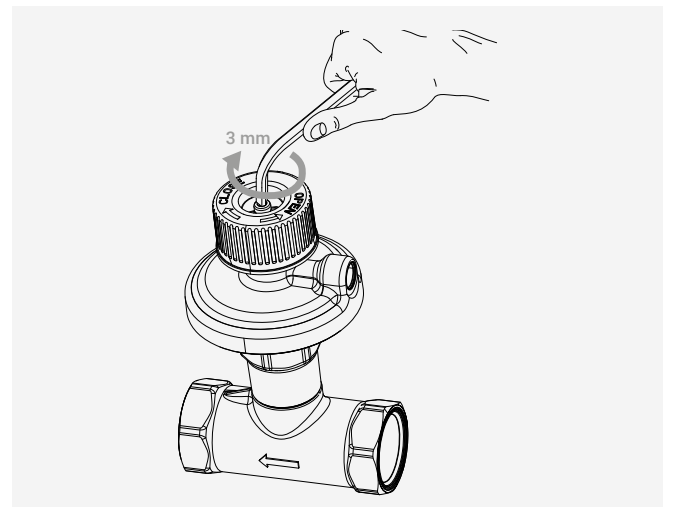
When water comes out of the capillary tube instead of water mixed to air, fully tighten the capillary tube fitting to valve R206C-1.

## ➤ Presetting

We recommend presetting valve R206C-1 when the system is off.

Refer to presetting diagrams to set the differential pressure. From the Fully Open position, close the valve stem with a 3 mm Allen wrench, turning it clockwise and counting the number of turns up to the desired position.

**⚠ NOTE.** When the calibration value is unknown, loosen the socket-head screw completely and start recounting the number of setting turns up to the desired position.

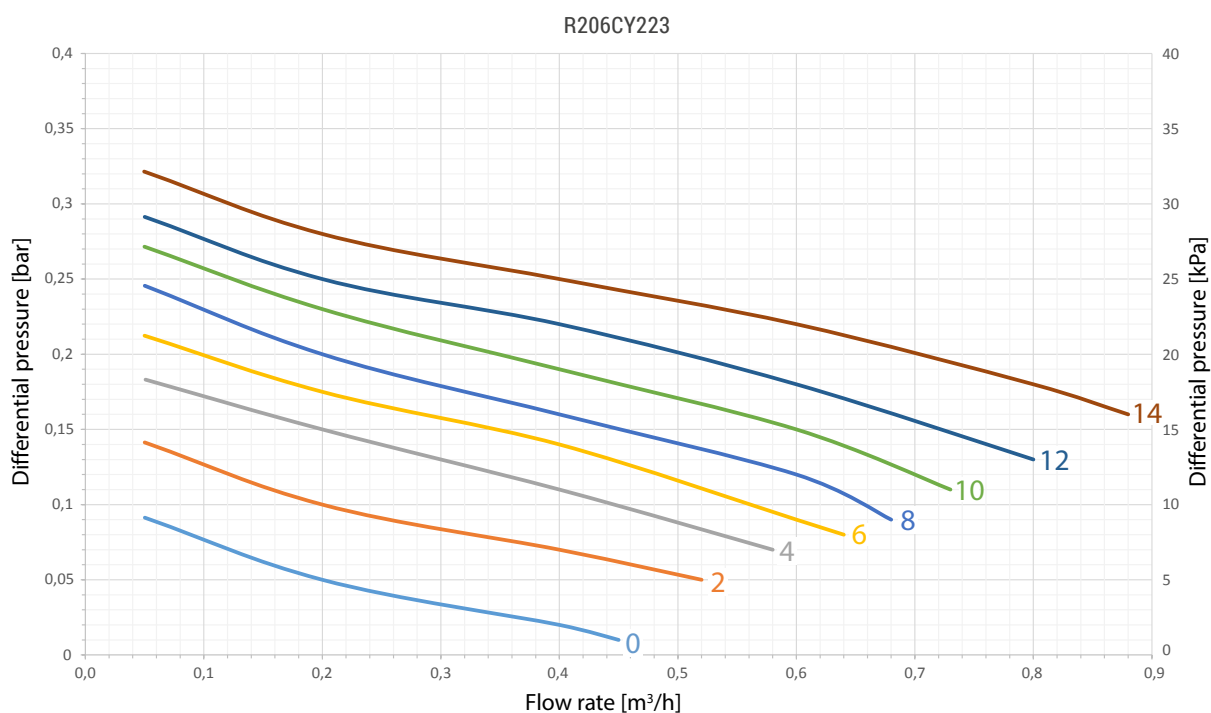




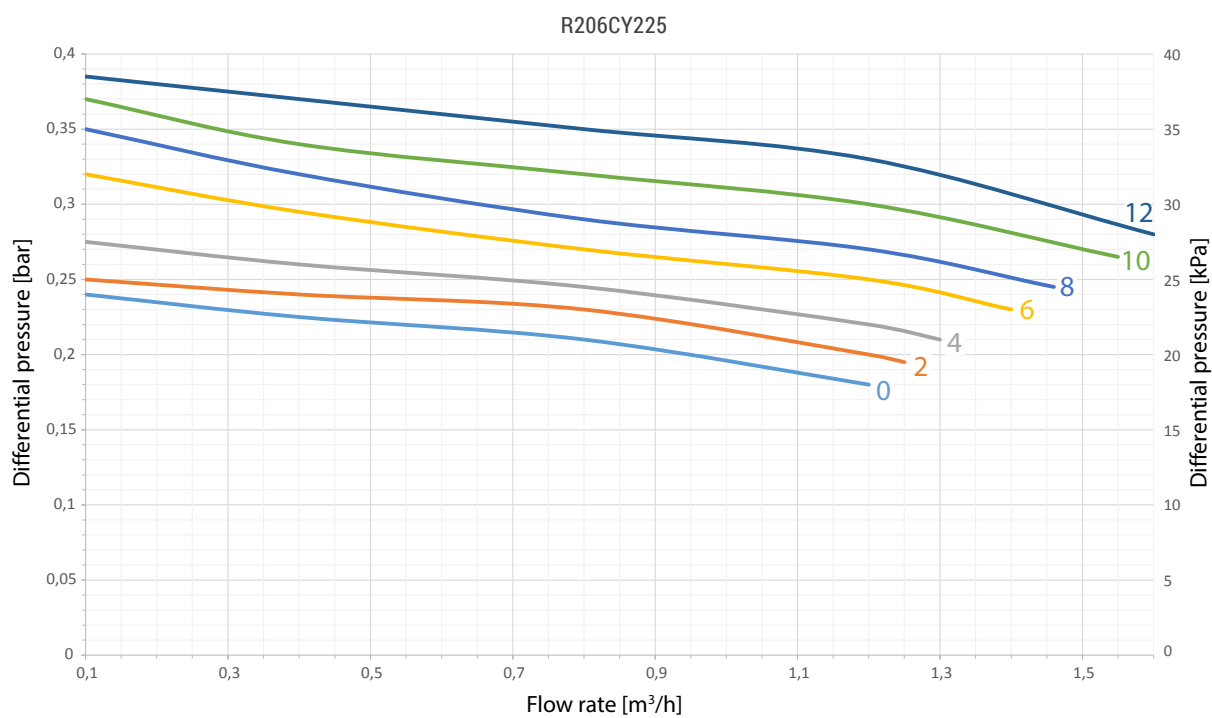
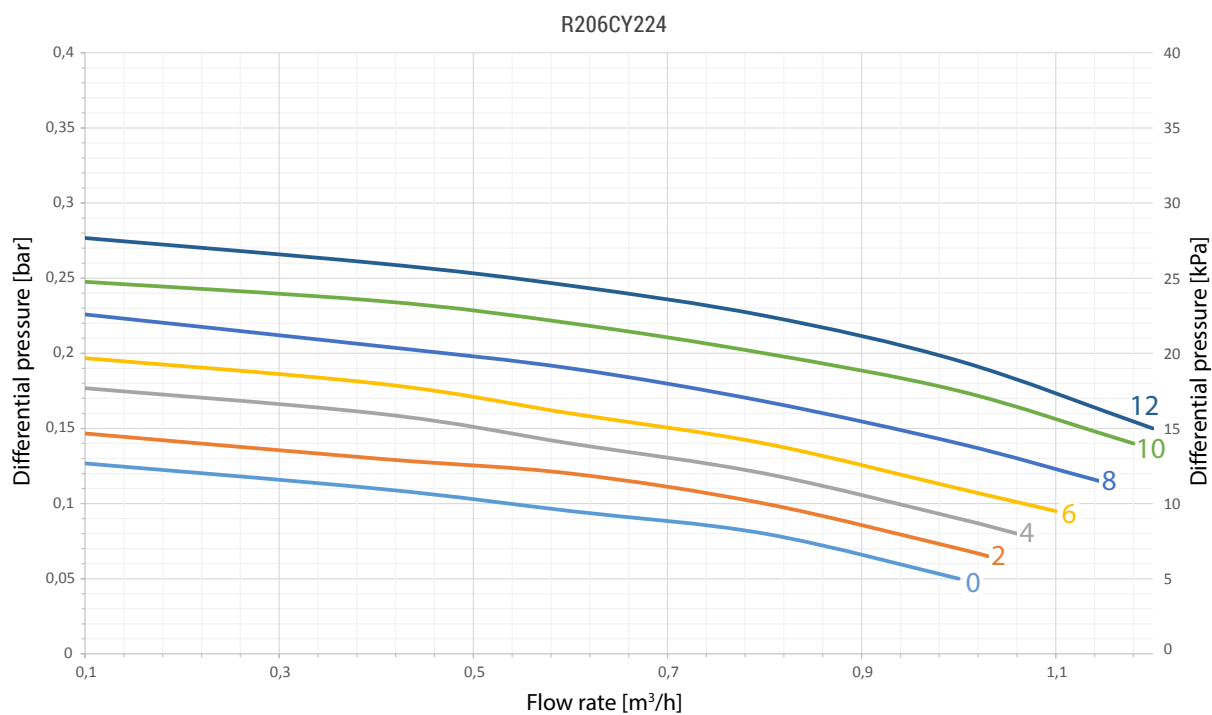
## ➤ Presetting diagrams

Valves with setting range "L" 5÷30 kPa

No. of stem turns clockwise (from Fully Open position)	R206CY223		R206CY224		R206CY225	
	Qmin [m³/h]	Qmax [m³/h]	Qmin [m³/h]	Qmax [m³/h]	Qmin [m³/h]	Qmax [m³/h]
0	0,05	0,45	0,10	1,00	0,10	1,20
2	0,05	0,52	0,10	1,03	0,10	1,25
4	0,05	0,58	0,10	1,06	0,10	1,30
6	0,05	0,64	0,10	1,10	0,10	1,40
8	0,05	0,68	0,10	1,15	0,10	1,46
10	0,05	0,73	0,10	1,18	0,10	1,55
12	0,05	0,80	0,10	1,20	0,10	1,60
14	0,05	0,88	-	-	-	-



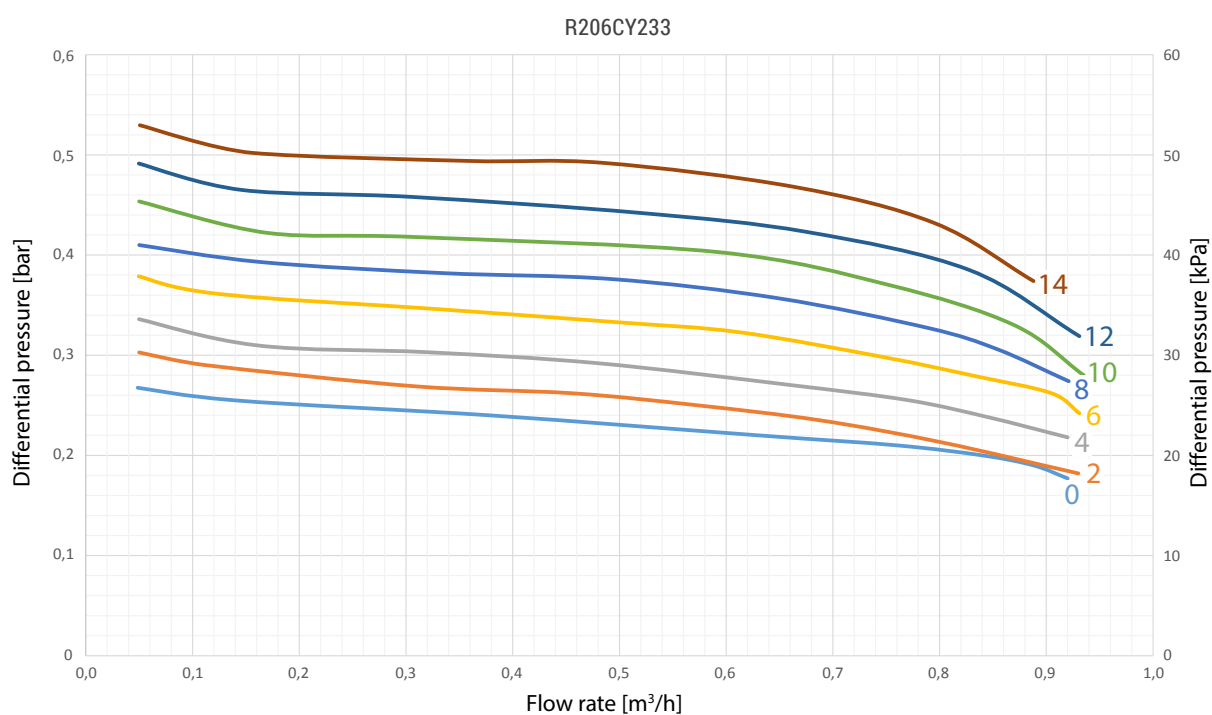




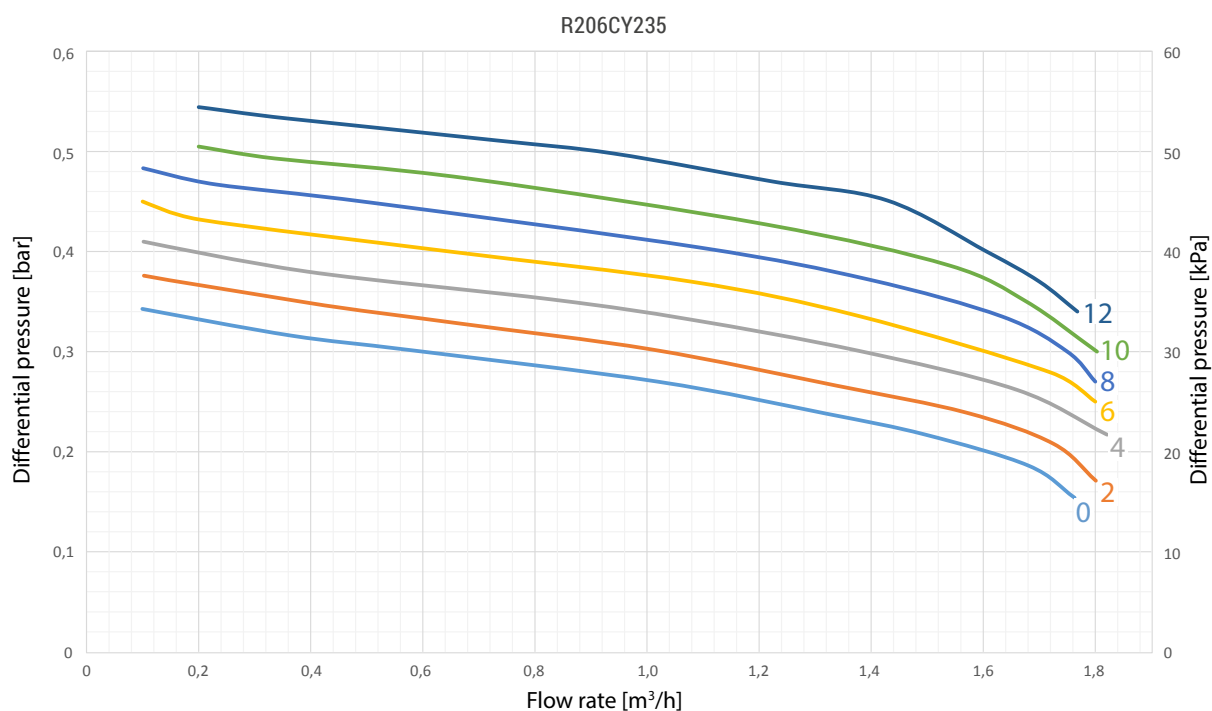
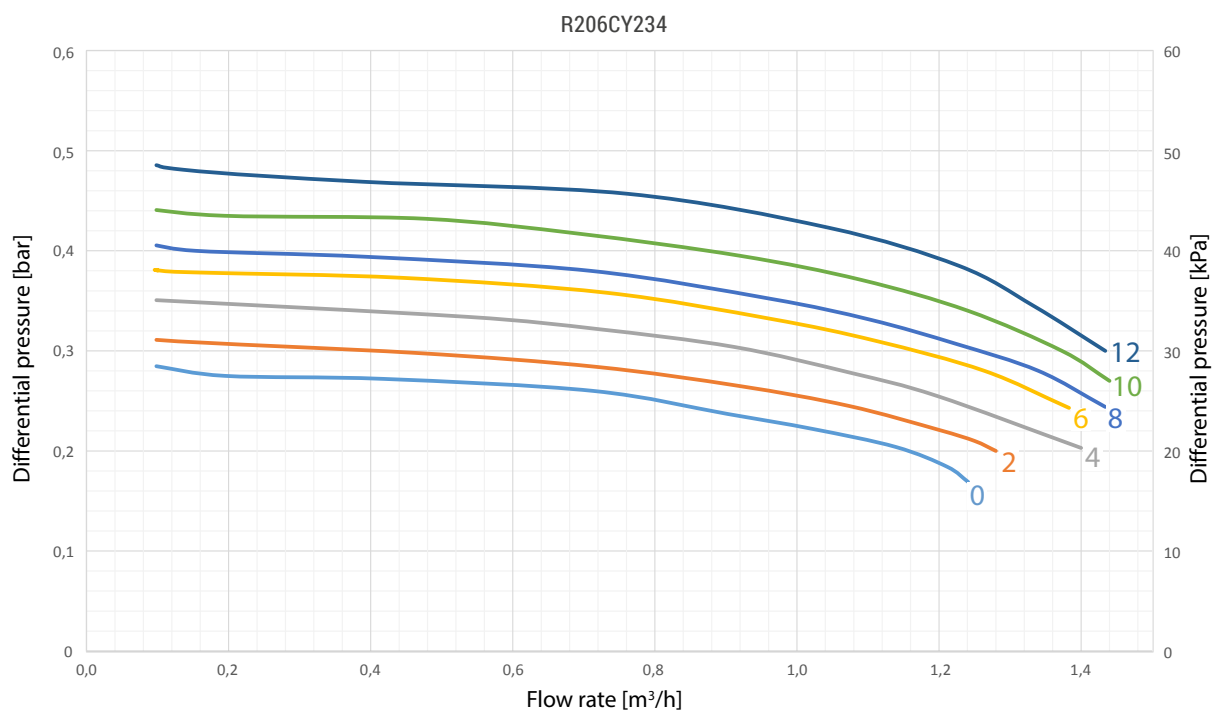


## Valves with setting range "H" 25÷60 kPa

No. of stem turns clockwise (from Fully Open position)	R206CY233		R206CY234		R206CY235	
	Qmin [m³/h]	Qmax [m³/h]	Qmin [m³/h]	Qmax [m³/h]	Qmin [m³/h]	Qmax [m³/h]
0	0,05	0,92	0,10	1,23	0,10	1,77
2	0,05	0,93	0,10	1,27	0,10	1,80
4	0,05	0,92	0,10	1,40	0,10	1,83
6	0,05	0,94	0,10	1,39	0,10	1,80
8	0,05	0,92	0,10	1,43	0,10	1,80
10	0,05	0,94	0,10	1,43	0,20	1,80
12	0,05	0,93	0,10	1,43	0,20	1,77
14	0,05	0,89	-	-	-	-



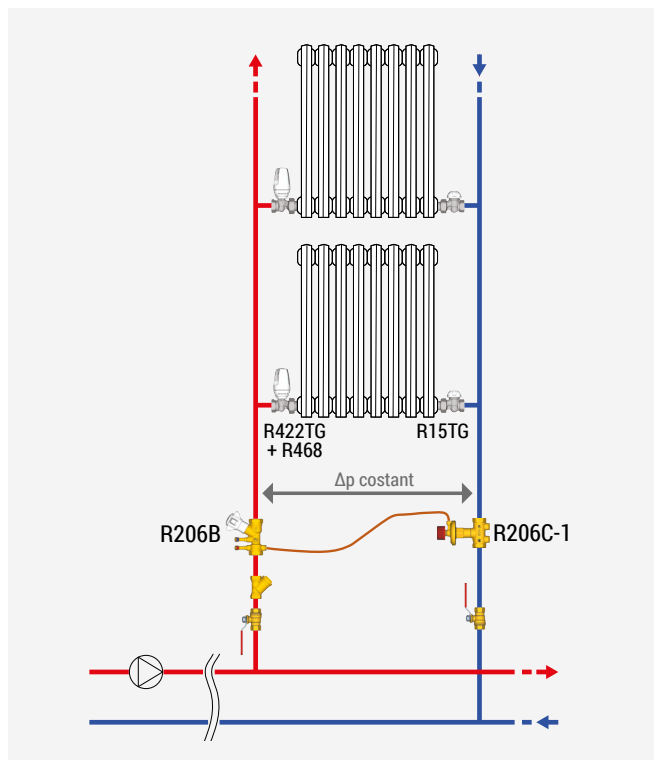




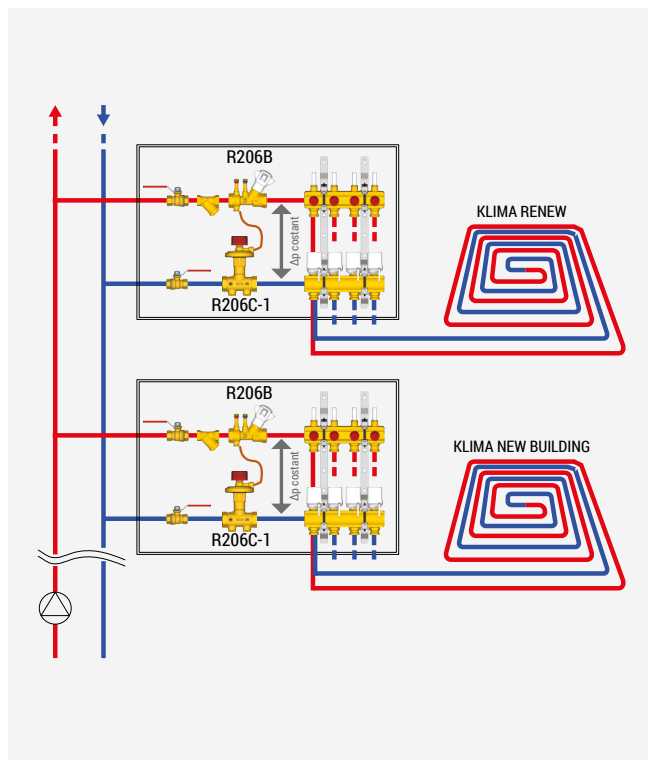


## ➤ Application diagrams

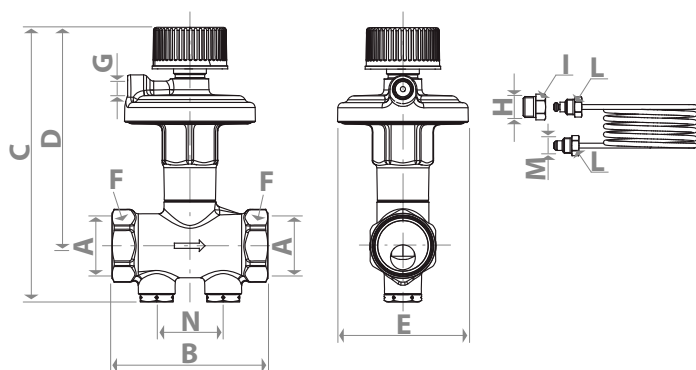
Example of application with radiator riser systems



Example of application with radiant floor systems



## ➤ Dimensions



PRODUCT CODE	DN	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	L [mm]	M [mm]	N [mm]
R206CY223 R206CY233	15	Rp 1/2"	65	125	103	63	25						25
R206CY224 R206CY234	20	Rp 3/4"	75	132	105	63	32	G 1/8"F	G 1/4"M	14	11	G 1/8"M	32
R206CY225 R206CY235	25	Rp 1"	85	142	112	63	40						39



## ➤ Product specifications

### R206C-1

Compact differential pressure controller, with pressure outlets, for constant differential pressure of part of the hydraulic circuit at any flow rate. Nominal differential pressure can be set on a range between 5÷30 kPa ("L" - Low) or 25÷60 kPa ("H" - High) depending on the versions. The presetting diagrams show the setting value. 1 m copper capillary tube included. Anti-dezincification brass body (DZR). Co-molded membrane with stainless steel disc and EPDM O-Ring. Working temperature range 5÷110 °C. Max. working pressure 25 bar.

#### **i** UNIT OF MEASUREMENT.

1 bar = 100 kPa

1 m³/h = 1000 l/h = 16,7 l/min = 0,28 l/s

**⚠ Safety Warning.** Installation, commissioning and periodical maintenance of the product must be carried out by qualified operators in compliance with national regulations and/or local standards. A qualified installer must take all required measures, including use of Individual Protection Devices, for his and others' safety. An improper installation may damage people, animals or objects towards which Giacomini S.p.A. may not be held liable.

**♻ Package Disposal.** Carton boxes: paper recycling. Plastic bags and bubble wrap: plastic recycling.

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**♻ Product Disposal.** Do not dispose of product as municipal waste at the end of its life cycle. Dispose of product at a special recycling platform managed by local authorities or at retailers providing this type of service.