

R206AM

ACCESSORIES

Description

R206AM is a pressure independent control valve (PICV) that combines an automatic flow rate regulator and a control valve with actuator. The valve can adjust flow rate and keep it constant in the presence of changing differential pressure conditions of the circuit in which it is installed. Flow rate is adjusted in two different ways:

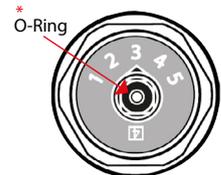
- **manually** on the automatic flow rate regulator, to restrict the maximum value
- **automatically** by the control valve in combination with a proportional (0÷10 V) or ON/OFF actuator, in accordance with the thermal load requirements of the section of the circuit to be controlled.

The set flow rate is guaranteed inside the declared range of differential pressure, with a maximum error of ± 10 % on controlled flow rate value or ± 5 % on the maximum flow rate. R206AM valves feature pressure plugs connections for flow measurements and verifications.
(Please refer to the following page for the complete regulation tables of different valve types).

Versions and codes

| Product code | Connections | O-Ring colour * | Working flow rate [l/h] | Differential pressure range Δp [kPa] | Actuator (optional) |
|--------------|-------------|-----------------|-------------------------|--------------------------------------|--|
| R206AY053 | G 1/2" F | Grey | 37 - 575 | 16 - 400 | K281X012 K281X022 K281EX001 K281EX002 |
| R206ANY054 | G 3/4" F | Black | 64 - 1110 | 30 - 400 | |
| R206AY055 | G 1" F | Black | 64 - 1110 | 30 - 400 | |
| R206AY065 | G 1" F | Black | 865 - 4630 | 16 - 400 | K281X032 |
| R206AY056 | G 1-1/4" F | Black | 865 - 4630 | 16 - 400 | K281X042 |
| R206AY057 | G 1-1/2" F | Black | 1900 - 13647 | 16 - 400 | |
| R206AY058 | G 2" F | Black | 1900 - 13647 | 16 - 400 | |

Warning
Respect the correspondence between actuators and valves: breaking danger!



Accessories

| Product code | Corresponding valve | Description and technical features |
|--------------|---------------------|---|
| | K281EX001 | R206AY053, R206ANY054, R206AY055 Thermo-electric actuator normally closed, ON/OFF type. Power supply 230 Vac, 50/60 Hz. Power consumption 1,2 W. Working temperature range: 0÷60 °C. Opening time 4,5 min. Protection class IP54. Cable length 1 m. Valve connection M30 x 1,5 mm. |
| | K281EX002 | R206AY053, R206ANY054, R206AY055 Thermo-electric actuator normally closed, ON/OFF type. Power supply 24 Vac, 50/60 Hz. Power consumption 1,2 W. Working temperature range: 0÷60 °C. Opening time 4,5 min. Protection class IP54. Cable length 1 m. Valve connection M30 x 1,5 mm. |
| | K281X012 | R206AY053, R206ANY054, R206AY055 Actuator 0÷10 V. Power supply 24 Vac, 50/60 Hz. Power consumption 2,5 VA. Working temperature range: 0÷50 °C. Opening time at max speed 50 sec. Protection class IP43. Cable length 1,5 m. Valve connection M30 x 1,5 mm. |
| | K281X022 | R206AY053, R206ANY054, R206AY055 Actuator ON/OFF. Power supply 24 V, 50/60 Hz. Power consumption 5 VA. Working temperature range: 0÷50 °C. Opening time at max speed 85 sec. Protection class IP40. Cable length 1,5 m. Valve connection M30 x 1,5 mm. |
| | K281X032 | R206AY056, R206AY065 Actuator 0÷10 V. Power supply 24 Vac/dc, 50/60 Hz. Power consumption 5 VA. Working temperature range: 2÷50 °C. Opening time 18,5 sec/mm @ 50 Hz. Protection class IP54. Cable length 1 m. Valve connection M30 x 1,5 mm. |
| | K281X042 | R206AY057, R206AY058 Actuator 0÷10 V. Power supply 24 Vac/dc, 50/60 Hz. Power consumption 7 VA. Working temperature range: 2÷50 °C. Opening time 28 sec/mm @ 50 Hz. Protection class IP54. Cable length 1 m. Valve connection M30 x 1,5 mm. |
| | P206Y001 | All Probe holder (no.2) kit for temperature/pressure measurement. |
| | R225EY001 | All Differential pressure gauge. |
| | P206AMY001 | R206AY053 Spare part cartridge for R206AY053 |
| | P206AMY002 | R206ANY054, R206AY055 Spare part cartridge for R206ANY054, R206AY055 |
| | P206AMY003 | R206AY065, R206AY056 Spare part cartridge for R206AY065, R206AY056 |

Technical data

- Compatible fluids: water and glycol solutions (max. 50 % of glycol)
- Maximum working temperature: 120 °C
- Ambient temperature: 1 ÷ 50 °C
- Maximum working pressure: 25 bar
- Maximum differential pressure range: 4 bar (2 bar for R206AY053)
- Maximum close-off differential pressure with actuator: 6 bar
- Actuator connections: M30 x 1,5 mm
- Leakage rating: Class 4 (IEC60534-4)
- Maximum seat leakage:
 - R206AY053: 0,35 l/h
 - R206ANY054, R206AY055: 0,50 l/h
 - R206AY056, R206AY065: 2,32 l/h
 - R206AY057, R206AY058: 8,36 l/h

Material

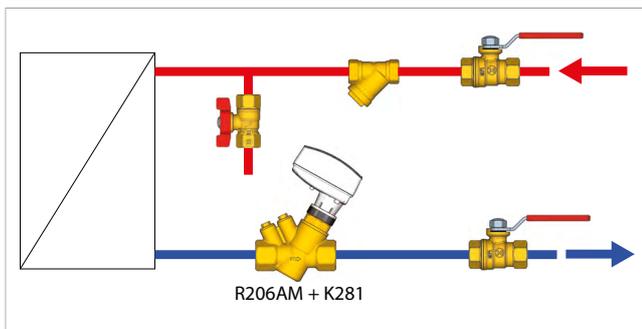
- Body: brass CW617N - UNI EN 12165
- Cartridge:
 - Insert: glass reinforced PSU/POM/PPS
 - Diaphragm: EPDM
 - Internal metal components: stainless steel
 - O-Rings: EPDM
 - Shutter: PPS

Installation

The R206AM pressure independent control valve should be installed on the return side of the system. It is recommended to install a filter upstream the R206AM valve to prevent damage or blockage due to debris.

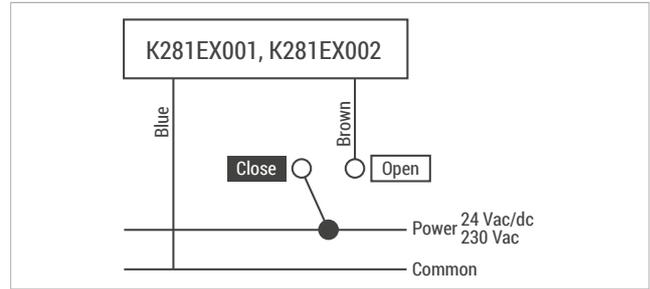
Furthermore, it is recommended not to exceed the maximum differential pressure control range of the cartridge.

NB.
Failure to abide by all recommendations as per this installation and operation instruction will void warranty.

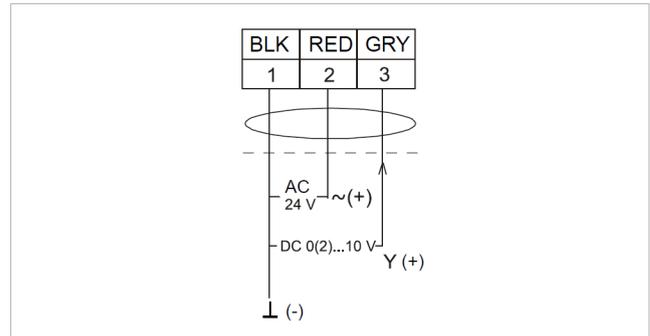


Actuators electrical connections

K281EX001, K281EX002

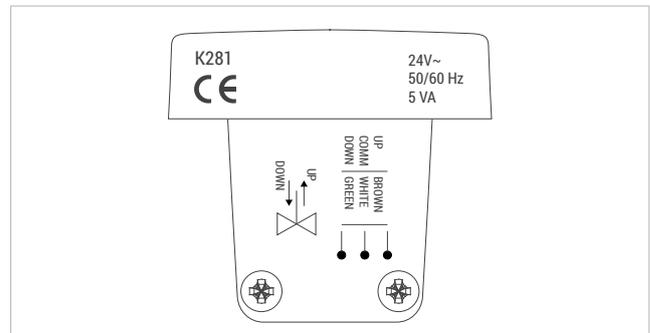


K281X012



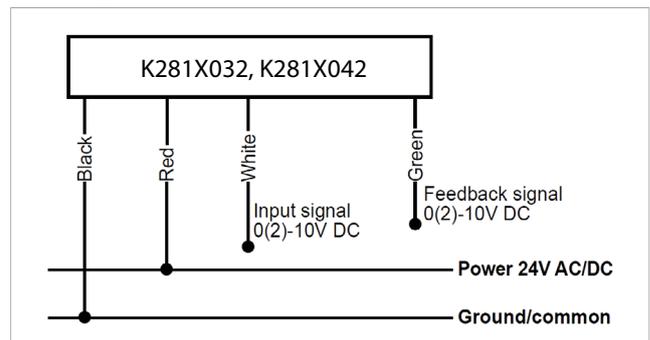
| Colore del conduttore | Funzione |
|-----------------------|-------------------------------------|
| Nero (BLK) | Alimentazione 24 Vac |
| Rosso (RED) | |
| Grigio (GRY) | Contatto di salita/discesa 0-10 Vdc |

K281X022

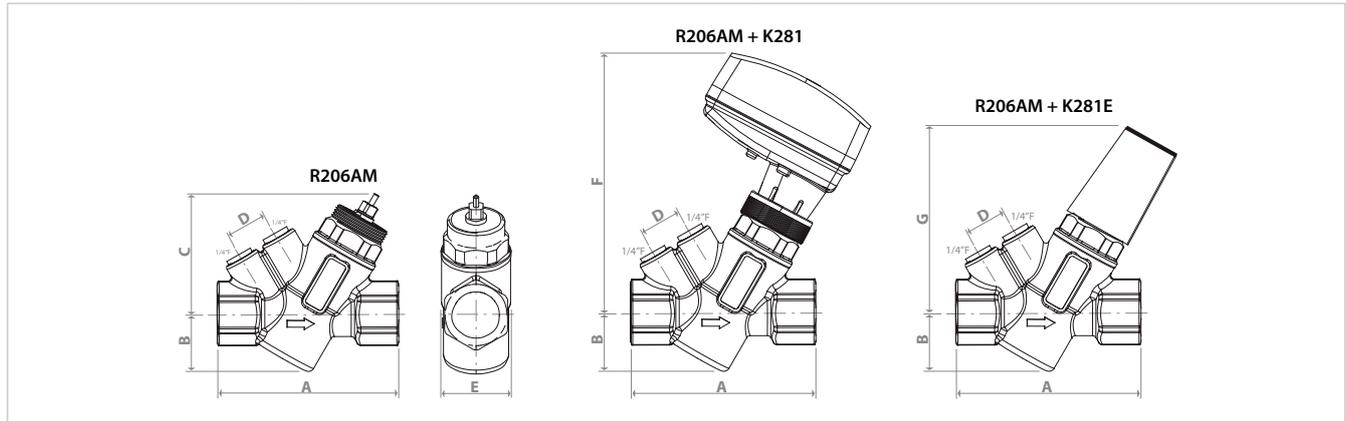


| Colore del conduttore | Funzione |
|-----------------------|--|
| Marrone (BROWN) | Contatto salita "UP" dello stelo. (CHIUSURA in corso della via diretta con valvola miscelatrice) |
| Bianco (WHITE) | Contatto COMUNE |
| Verde (GREEN) | Contatto discesa "DOWN" dello stelo (APERTURA in corso della via diretta con valvola miscelatrice) |

K281X032, K281X042



Dimensions

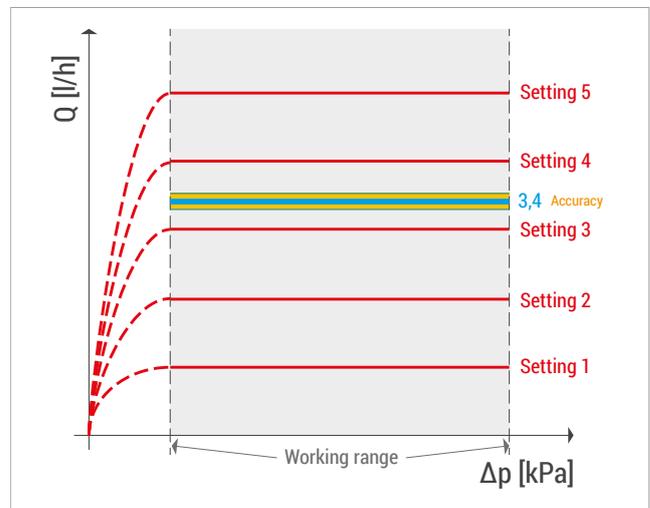
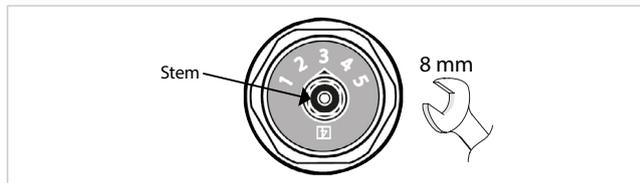


| Product code | Connections | A [mm] | B [mm] | C [mm] | D [mm] | E [mm] | F [mm] | G [mm] |
|--------------|-------------|--------|--------|--------|--------|--------|--------|--------|
| R206AY053 | G 1/2" F | 82 | 31 | 64 | 22 | 36 | 135 | 116 |
| R206ANY054 | G 3/4" F | 85 | 31 | 64 | 22 | 36 | 135 | 116 |
| R206AY055 | G 1" F | 102 | 31 | 64 | 22 | 36 | 135 | 116 |
| R206AY065 | G 1" F | 128 | 47 | 85 | 22 | 65 | 178 | - |
| R206AY056 | G 1-1/4" F | 128 | 47 | 85 | 22 | 65 | 178 | - |
| R206AY057 | G 1-1/2" F | 191 | 105 | 115 | 22 | 100 | 192 | - |
| R206AY058 | G 2" F | 191 | 105 | 115 | 22 | 100 | 192 | - |

Setting adjustment

To set the valve according to the desired flow rate, using a 8 mm wrench, rotate the stem valve clockwise to decrease the setting; counterclockwise to increase the setting.

I.e.: in figure is indicated a setting of 3,4.



Flow rate diagrams

Accuracy: highest between ± 10 % in case of controlled flow rate or ± 5 % in case of maximum flow rate

| | R206AY053 Δp: 16-400 kPa | | R206ANY054 Δp: 30-400 kPa | | R206AY055 Δp: 30-400 kPa | | R206AY056, R206AY065 Δp: 16-400 kPa | | R206AY057 Δp: 16-400 kPa | | R206AY058 Δp: 16-400 kPa | |
|---------|-----------------------------|-------|------------------------------|-------|-----------------------------|-------|--|------|-----------------------------|------|-----------------------------|------|
| Setting | l/h | GPM | l/h | GPM | l/h | GPM | l/h | GPM | l/h | GPM | l/h | GPM |
| 1.0 | - | - | 64 | 0,282 | 64 | 0,282 | 865 | 3,81 | 1900 | 8,4 | 1900 | 8,4 |
| 1.1 | 37 | 0,163 | 142 | 0,624 | 142 | 0,624 | 1010 | 4,46 | 2278 | 10,0 | 2278 | 10,0 |
| 1.2 | 84 | 0,37 | 209 | 0,92 | 209 | 0,92 | 1160 | 5,10 | 2655 | 11,7 | 2655 | 11,7 |
| 1.3 | 116 | 0,51 | 268 | 1,18 | 268 | 1,18 | 1300 | 5,72 | 3033 | 13,3 | 3033 | 13,3 |
| 1.4 | 151 | 0,664 | 319 | 1,41 | 319 | 1,41 | 1430 | 6,32 | 3410 | 15,0 | 3410 | 15,0 |
| 1.5 | 180 | 0,792 | 366 | 1,61 | 366 | 1,61 | 1570 | 6,90 | 3787 | 16,7 | 3787 | 16,7 |
| 1.6 | 205 | 0,902 | 408 | 1,8 | 408 | 1,8 | 1700 | 7,47 | 4163 | 18,3 | 4163 | 18,3 |
| 1.7 | 234 | 1,03 | 446 | 1,96 | 446 | 1,96 | 1820 | 8,02 | 4537 | 20,0 | 4537 | 20,0 |
| 1.8 | 259 | 1,14 | 482 | 2,12 | 482 | 2,12 | 1940 | 8,56 | 4909 | 21,6 | 4909 | 21,6 |
| 1.9 | 281 | 1,24 | 516 | 2,27 | 516 | 2,27 | 2060 | 9,08 | 5279 | 23,2 | 5279 | 23,2 |
| 2.0 | 302 | 1,33 | 549 | 2,42 | 549 | 2,42 | 2180 | 9,59 | 5646 | 24,8 | 5646 | 24,8 |
| 2.1 | 320 | 1,41 | 580 | 2,56 | 580 | 2,56 | 2290 | 10,1 | 6011 | 26,4 | 6011 | 26,4 |
| 2.2 | 339 | 1,49 | 611 | 2,69 | 611 | 2,69 | 2400 | 10,6 | 6372 | 28,0 | 6372 | 28,0 |
| 2.3 | 353 | 1,55 | 641 | 2,82 | 641 | 2,82 | 2510 | 11,0 | 6730 | 29,6 | 6730 | 29,6 |
| 2.4 | 371 | 1,63 | 671 | 2,95 | 671 | 2,95 | 2610 | 11,5 | 7083 | 31,2 | 7083 | 31,2 |
| 2.5 | 381 | 1,68 | 700 | 3,08 | 700 | 3,08 | 2710 | 11,9 | 7432 | 32,7 | 7432 | 32,7 |
| 2.6 | 394 | 1,73 | 728 | 3,21 | 728 | 3,21 | 2810 | 12,4 | 7776 | 34,2 | 7776 | 34,2 |
| 2.7 | 406 | 1,79 | 756 | 3,33 | 756 | 3,33 | 2900 | 12,8 | 8115 | 35,7 | 8115 | 35,7 |
| 2.8 | 414 | 1,82 | 783 | 3,45 | 783 | 3,45 | 3000 | 13,2 | 8449 | 37,2 | 8449 | 37,2 |
| 2.9 | 428 | 1,88 | 810 | 3,56 | 810 | 3,56 | 3090 | 13,6 | 8777 | 38,6 | 8777 | 38,6 |
| 3.0 | 439 | 1,93 | 835 | 3,68 | 835 | 3,68 | 3180 | 14,0 | 9098 | 40,0 | 9098 | 40,0 |
| 3.1 | 449 | 1,98 | 860 | 3,79 | 860 | 3,79 | 3260 | 14,4 | 4913 | 21,6 | 4913 | 21,6 |
| 3.2 | 458 | 2,02 | 883 | 3,89 | 883 | 3,89 | 3350 | 14,7 | 9721 | 42,8 | 9721 | 42,8 |
| 3.3 | 468 | 2,06 | 906 | 3,99 | 906 | 3,99 | 3430 | 15,1 | 10021 | 44,1 | 10021 | 44,1 |
| 3.4 | 477 | 2,1 | 927 | 4,08 | 927 | 4,08 | 3510 | 15,5 | 10314 | 45,4 | 10314 | 45,4 |
| 3.5 | 486 | 2,14 | 946 | 4,17 | 946 | 4,17 | 3590 | 15,8 | 10599 | 46,6 | 10599 | 46,6 |
| 3.6 | 494 | 2,17 | 965 | 4,25 | 965 | 4,25 | 3670 | 16,1 | 10875 | 47,9 | 10875 | 47,9 |
| 3.7 | 503 | 2,21 | 982 | 4,32 | 982 | 4,32 | 3740 | 16,5 | 11142 | 49,0 | 11142 | 49,0 |
| 3.8 | 511 | 2,25 | 998 | 4,39 | 998 | 4,39 | 3820 | 16,8 | 11400 | 50,2 | 11400 | 50,2 |
| 3.9 | 518 | 2,28 | 1010 | 4,46 | 1010 | 4,46 | 3890 | 17,1 | 11649 | 51,3 | 11649 | 51,3 |
| 4.0 | 526 | 2,31 | 1020 | 4,51 | 1020 | 4,51 | 3960 | 17,4 | 11888 | 52,3 | 11888 | 52,3 |
| 4.1 | 532 | 2,34 | 1040 | 4,57 | 1040 | 4,57 | 4030 | 17,7 | 12116 | 53,3 | 12116 | 53,3 |
| 4.2 | 538 | 2,37 | 1050 | 4,61 | 1050 | 4,61 | 4100 | 18,1 | 12334 | 54,3 | 12334 | 54,3 |
| 4.3 | 544 | 2,39 | 1060 | 4,66 | 1060 | 4,66 | 4170 | 18,4 | 12540 | 55,2 | 12540 | 55,2 |
| 4.4 | 549 | 2,42 | 1070 | 4,7 | 1070 | 4,7 | 4240 | 18,7 | 12735 | 56,0 | 12735 | 56,0 |
| 4.5 | 553 | 2,43 | 1080 | 4,73 | 1080 | 4,73 | 4300 | 19,0 | 12919 | 56,8 | 12919 | 56,8 |
| 4.6 | 559 | 2,46 | 1080 | 4,77 | 1080 | 4,77 | 4370 | 19,2 | 13090 | 57,6 | 13090 | 57,6 |
| 4.7 | 563 | 2,48 | 1090 | 4,8 | 1090 | 4,8 | 4440 | 19,5 | 13249 | 58,3 | 13249 | 58,3 |
| 4.8 | 567 | 2,5 | 1100 | 4,83 | 1100 | 4,83 | 4500 | 19,8 | 13395 | 58,9 | 13395 | 58,9 |
| 4.9 | 571 | 2,51 | 1100 | 4,86 | 1100 | 4,86 | 4570 | 20,1 | 13527 | 59,5 | 13527 | 59,5 |
| 5.0 | 575 | 2,53 | 1110 | 4,89 | 1110 | 4,89 | 4630 | 20,4 | 13647 | 60,0 | 13647 | 60,0 |

Additional information

For more information, go to www.giacomini.com or contact our technical assistance service: ☎ +39 0322 923372 📠 +39 0322 923255 ✉ consulenza.prodotti@giacomini.com
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