PRESSURE INDEPENDENT CONTROL VALVES (PICV) R206AM SERIES

R206AM

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 mistake 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 codes	Connections	O-Ring colour	Working flow rate [l/h]	Working pressure Δp [kPa]
R206AY053	1/2"F	Grey	37 - 575	16 - 200
R206AY054	3/4"F	Black	64 - 1109	30 - 400

Accessories

• **K281X012**: actuator for R206AM valve. Supply 24 V - 0÷10 V type. Valve connection M30 x 1,5 mm.
• **K281X022**: actuator for R206AM valve. Supply 24 V - ON/OFF type. Valve connection M30 x 1,5 mm.

• **P206Y001**: sensors holder (no.2) kit for the flow rate determination through measurement of differential pressure, 1/4" M connections.

• **R225EY001**: differential pressure manometer.

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 operational differential pressure: 4 bar
• Maximum differential pressure with actuator: 6 bar
• Connections: female, ISO 228
• Actuator connections: M30 x 1,5 mm

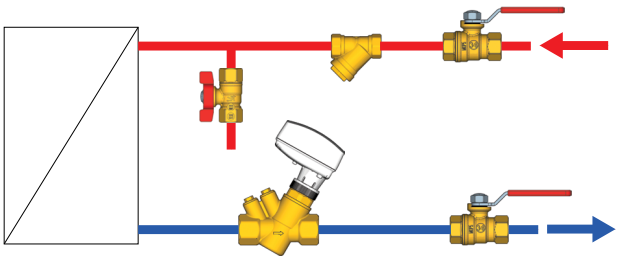
Material

• 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.

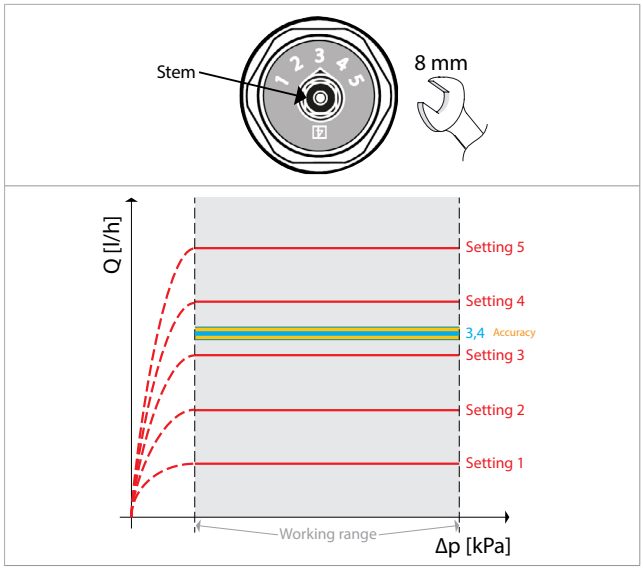
NB.
Failure to abide by all recommendations as per this installation and operation instruction will void warranty.



R206AM + K281

Setting adjustment

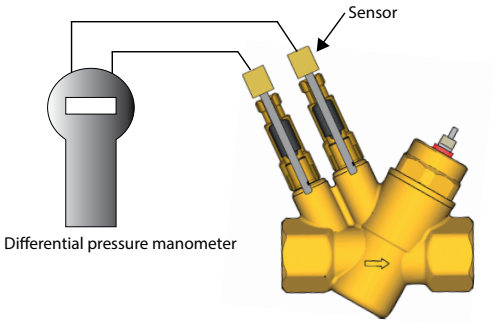
To set the valve according to the desired flow rate, using a 8 mm wrench, rotate the stem valve clockwise to decrease the setting; counterclockwise to increase the setting.
I.e.: in figure is indicated a setting of 3,4.



Flow rate measurement

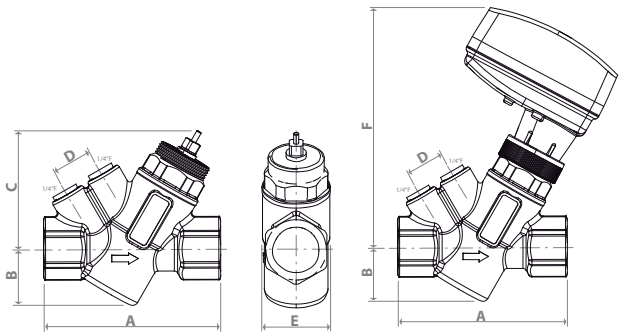
To calculate the R206AM flow rate, you just have to measure differential pressure by installing the sensor holder P206Y001 in the housings of the valve and using a differential pressure manometer. If the differential pressure is included in the cartridge Δp range and it is higher than the minimum value requested for the presetting flow rate, then the flow rate is equal to the nominal value written in the tables "Flow rate diagrams".

Pressure independent control valve R206AM + sensor holder P206Y001 + differential pressure manometer R225E



Warning.
Leakage of hot water can occur through the pressure outlets during the installation of the sensors. Wear protective clothes and glasses in order to prevent personal physical damages during the pressure measure. Do not use lubricants on the sensors to ease the outlet insertion. If needed simply wet the sensors with clean water.
Do not leave the measure needle too much time in the pressure outlet, as it could cause leakages.

Dimensions



Product code	Connect.	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
R206AY053	1/2"F	82	31	64	22	36	135
R206AY054	3/4"F	94	31	64	22	36	135

Flow rate diagrams

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

R206AY053 - Δp: 16-200 kPa		
Setting	l / sec	l / h
1.0	-	-
1.1	0.0103	37
1.2	0.0233	84
1.3	0.0322	116
1.4	0.0419	151
1.5	0.0500	180
1.6	0.0569	205
1.7	0.0650	234
1.8	0.0719	259
1.9	0.0781	281
2.0	0.0839	302
2.1	0.0889	320
2.2	0.0942	339
2.3	0.0981	353
2.4	0.103	371
2.5	0.106	381
2.6	0.109	394
2.7	0.113	406
2.8	0.115	414
2.9	0.119	428
3.0	0.122	439
3.1	0.125	449
3.2	0.127	458
3.3	0.130	468
3.4	0.133	477
3.5	0.135	486
3.6	0.137	494
3.7	0.140	503
3.8	0.142	511
3.9	0.144	518
4.0	0.146	526
4.1	0.148	532
4.2	0.149	538
4.3	0.151	544
4.4	0.153	549
4.5	0.154	553
4.6	0.155	559
4.7	0.156	563
4.8	0.158	567
4.9	0.159	571
5.0	0.160	575

R206AY054 - Δp: 30-400 kPa		
Setting	l / sec	l / h
1.0	0.0178	64
1.1	0.0393	142
1.2	0.0580	209
1.3	0.0743	268
1.4	0.0887	319
1.5	0.102	366
1.6	0.113	408
1.7	0.124	446
1.8	0.134	482
1.9	0.143	516
2.0	0.152	549
2.1	0.161	580
2.2	0.170	611
2.3	0.178	641
2.4	0.186	671
2.5	0.194	700
2.6	0.202	728
2.7	0.210	756
2.8	0.218	783
2.9	0.225	810
3.0	0.232	835
3.1	0.239	860
3.2	0.245	883
3.3	0.252	906
3.4	0.257	927
3.5	0.263	946
3.6	0.268	965
3.7	0.273	982
3.8	0.277	998
3.9	0.281	1010
4.0	0.285	1020
4.1	0.288	1040
4.2	0.291	1050
4.3	0.294	1060
4.4	0.296	1070
4.5	0.299	1080
4.6	0.301	1080
4.7	0.303	1090
4.8	0.305	1100
4.9	0.307	1100
5.0	0.308	1110

Additional information
For additional information please check the website www.giacomini.com or contact the technical service: ☏ +39 0322 923372 🖷 +39 0322 923255 ✉ consulenza.prodotti@giacomini.com