

R206AM



Energy
Management

Pressure independent control valve (PICV)

Datasheet / Instruction
0782EN  11/2022



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.

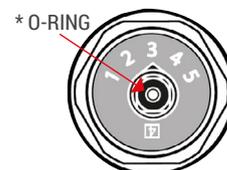
The set flow rate is guaranteed inside the declared range of differential pressure, with a maximum error of $\pm 10\%$ on controlled flow rate value or $\pm 5\%$ on the maximum flow rate.

The valve is equipped with pressure outlets for measuring the differential pressure in combination with a differential pressure gauge and its own probes (please refer to the following page for the complete regulation tables of different valve types).

➤ Versions and product codes

PRODUCT CODE	CONNECTIONS	O-RING COLOR *	WORKING FLOW RATE RANGE [l/h]	WORKING DIFFERENTIAL PRESSURE RANGE [kPa]	ACTUATOR (accessories)
R206AY053	G 1/2"F	Grey	37 - 575	16 - 600	K281X012 K281X022 K281EX001 K281EX002
R206ANY054	G 3/4"F	Black	64 - 1110	30 - 800	
R206AY055	G 1"F	Black	64 - 1110	30 - 800	
R206AY065	G 1"F	Black	865 - 4630	16 - 800	K281X032
R206AY056	G 1-1/4"F	Black	865 - 4630	16 - 800	
R206AY057	G 1-1/2"F	Black	1900 - 13647	16 - 600	K281X042
R206AY058	G 2"F	Black	1900 - 13647	16 - 600	

⚠ 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 2,5 VA. Working temperature range: 0÷50 °C. Opening time 22 sec/mm. Protection class IP54. Cable length 1,5 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 6 VA. Working temperature range: 0÷50 °C. Opening time 22 sec/mm. Protection class IP54. Cable length 1,5 m. Valve connection M30 x 1,5 mm.
	P206Y001	All Straight probe holder for pressure outlets, to measure the flow rate in the balancing valves. Suitable for pressure outlets with needle Ø3 mm and length 30÷40 mm.
	P206Y011	All Probe holder with 90°elbow fittings for pressure outlets, to measure the flow rate in the balancing valves. Suitable for pressure outlets with needle Ø3 mm and length 30÷40 mm.
	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

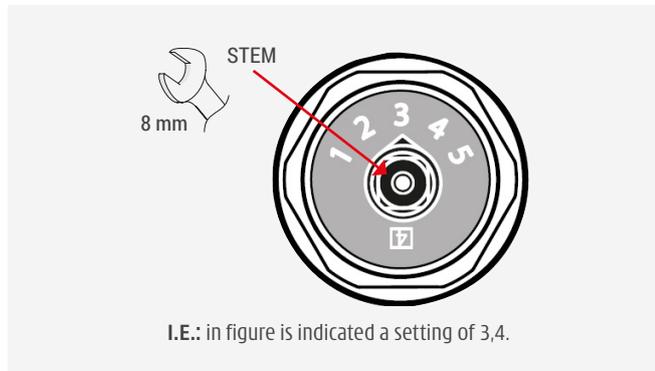
Performance

- Fluids: water and glycol solutions (max. 50 % of glycol)
- Maximum working temperature: 120 °C
- Room temperature: 1+50 °C
- Maximum working pressure: 25 bar
- Working differential pressure range: see table "Versions and product codes"
- Maximum close-off differential pressure with actuator: 8 bar
- Actuator connections: M30 x 1,5 mm
- Leakage rating: Class 4 (IEC60534-4)
- Maximum seat leakage: Class IV (in accordance with IEC60534-4)

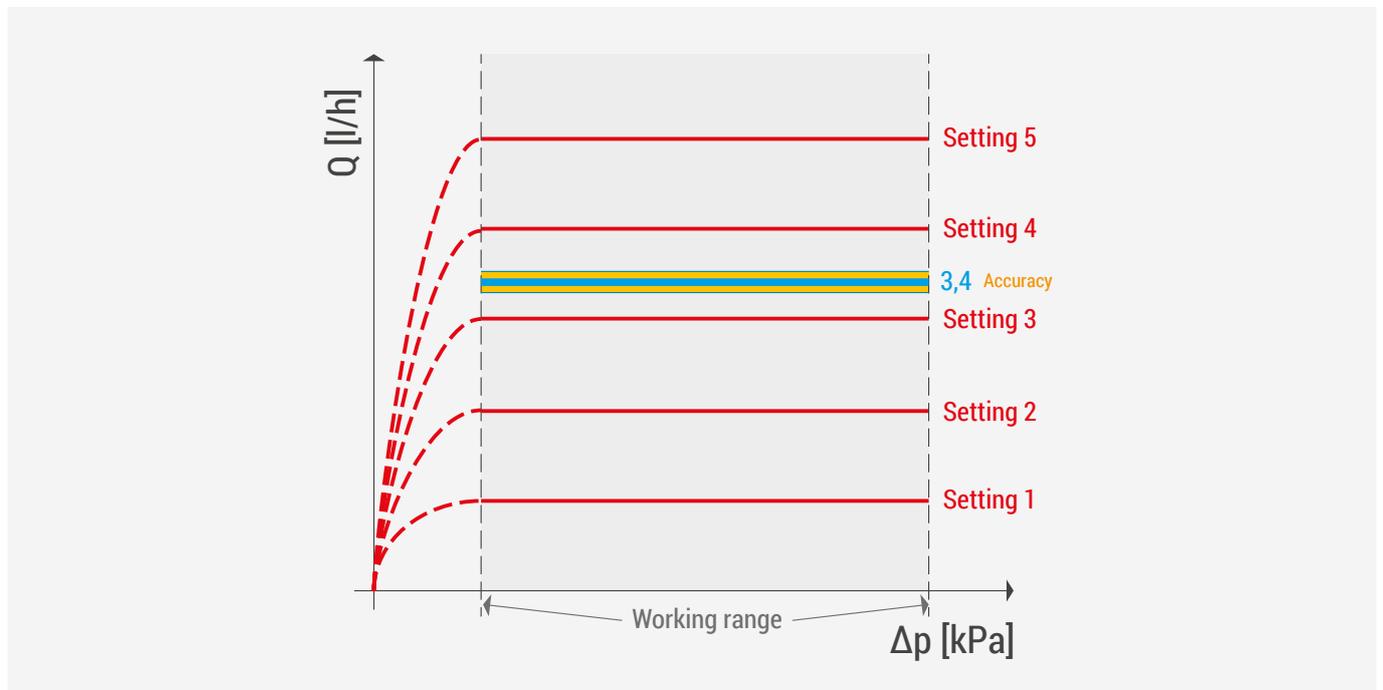
Materials

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

➤ Flow rate presetting



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.



Flow rate diagrams

Accuracy: highest between $\pm 10\%$ in case of controlled flow rate or $\pm 5\%$ in case of maximum flow rate.

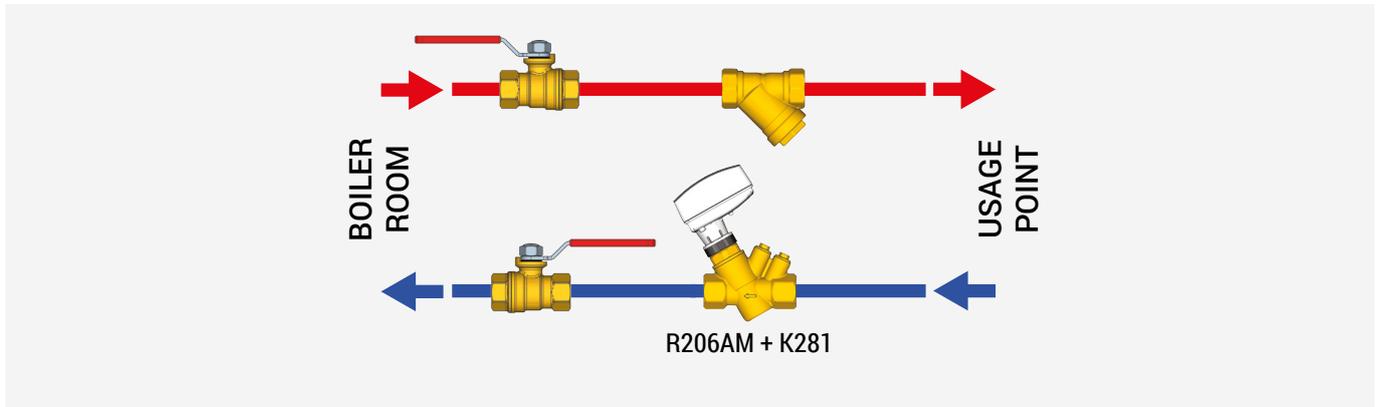
Setting	R206AY053 Δp : 16-600 kPa		R206ANY054 Δp : 30-800 kPa		R206AY055 Δp : 30-800 kPa		R206AY056, R206AY065 Δp : 16-800 kPa		R206AY057 Δp : 16-600 kPa		R206AY058 Δp : 16-600 kPa	
	l/h	GPM	l/h	GPM	l/h	GPM	l/h	GPM	l/h	GPM	l/h	GPM
1.0	-	-	64	0,282	64	0,282	865	3,81	1900	8,4	1900	8,4
1.1	37	0,163	142	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	9413	41,6	9413	41,6
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

Installation

The R206AM valve should be installed on the return side of the system.

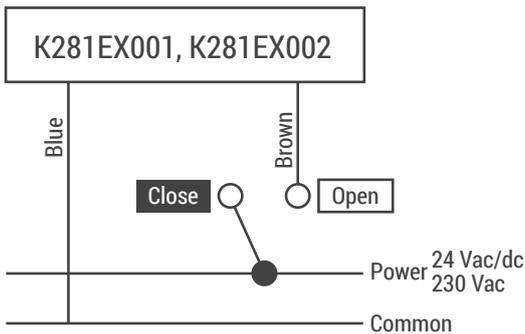
It is recommended to install a filter upstream the R206AM valve to prevent damage or blockage due to debris. Furthermore, it is recommended not to exceed the maximum differential pressure control range of the cartridge.

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

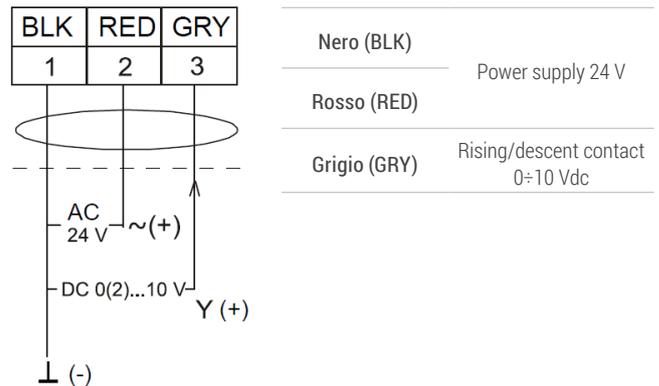


Actuators electrical connections

K281EX001, K281EX002



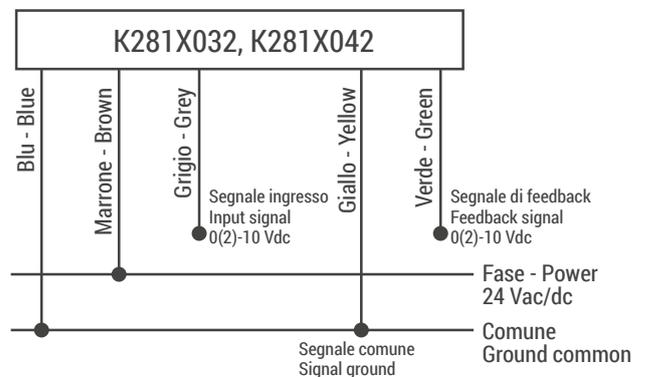
K281X012



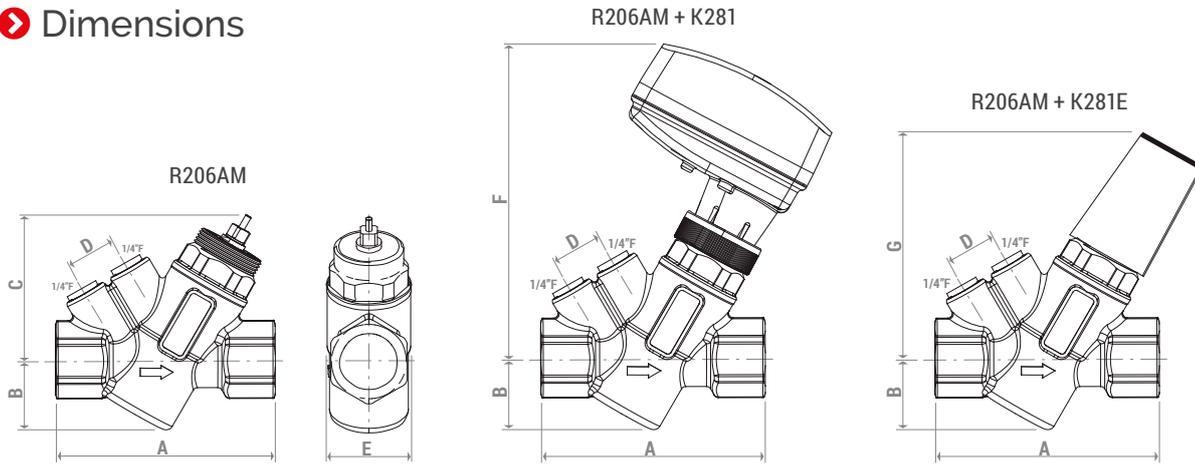
K281X022



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	-

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.