Series PR1

AVENTICS™

AVENTICS Series PR1 Precision pressure regulators

EMERSON™

Series PR1/PR2

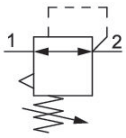
The AVENTICS Series PR1/PR2 is designed for applications that demand fast responses to the slightest fluctuation in compressed air. They can be adjusted precisely and are an alternative to electronic pressure regulators. Precision pressure regulators are used to achieve extremely accurate pressure control independent from the pilot pressure and the flow rate. They offer high performance and flexibility, combined with increased reliability.

- Precise pressure control of the output pressure
- High performance
- Flexible
- Increased reliability

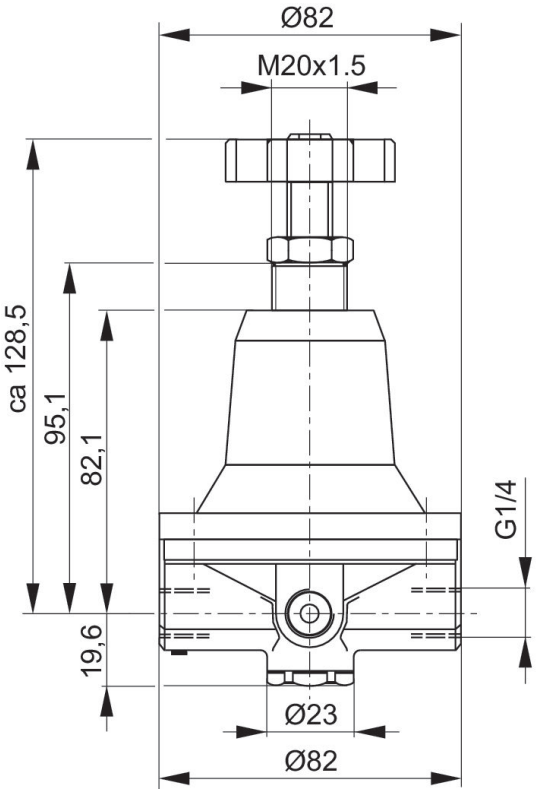
Product overview

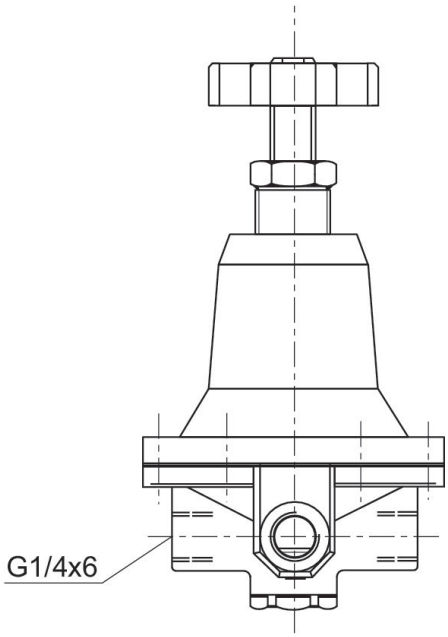
Precision pressure regulator, Series PR1-RGP

Activation: Mechanical
Actuating element: Precision pressure regulator
Mounting orientation: Any
Flow: 480 l/min
Ambient temperature min./max.: -10 °C ... 60 °C
Working pressure min./max.: 0.5 bar ... 16 bar

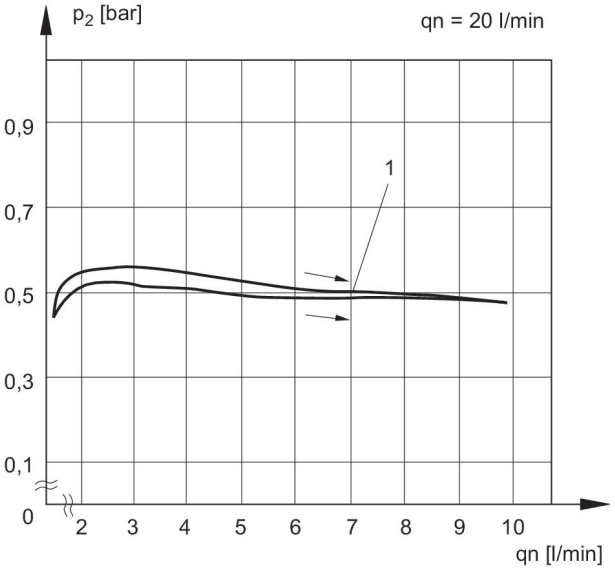
	Port	Nominal flow [l/min]	Working pressure min./max. [bar]	Min. regulation rangep2 [bar]	Max. regulation rangep2 [bar]	Part No.
	G 1/4	480	0.5, 16	0.1	1	R412010259

Dimensions in mm



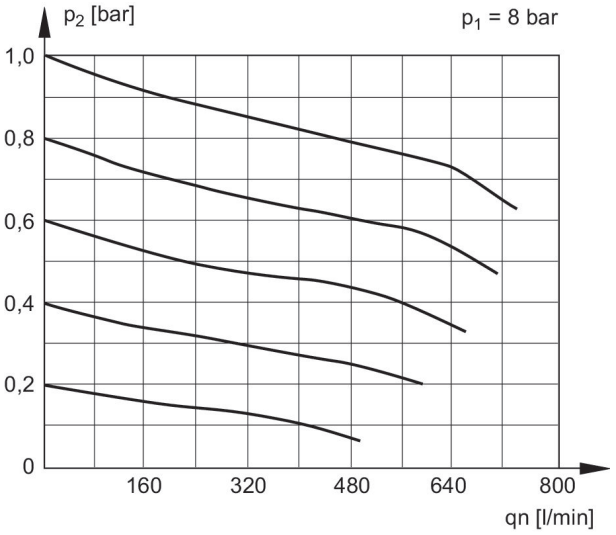


Pressure characteristics curve



p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow
1) Starting point

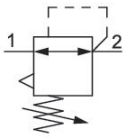
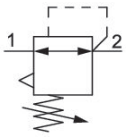
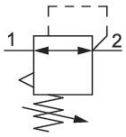
Flow rate characteristic, p2 = 0,05 - 7 bar



p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

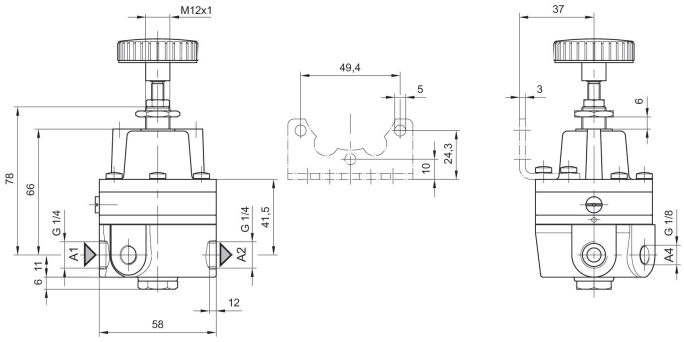
Precision pressure regulator, Series PR1-RGP

Activation: Mechanical
Actuating element: Precision pressure regulator
Mounting orientation: Any
Ambient temperature min./max.: -10 °C ... 60 °C
Medium temperature min./max.: -10 °C ... 60 °C
Working pressure min./max.: 0.5 bar ... 16 bar

	Port	Nominal flow [l/min]	Working pressure min./max. [bar]	Min. regulation rangep2 [bar]	Max. regulation rangep2 [bar]	Part No.
	G 1/4	450	0.5, 16	0.05	2	0821302445
	G 1/4	580	0.5, 16	0.05	4	0821302446
	G 1/4	1000	0.5, 16	0.05	7	0821302447

0821302445

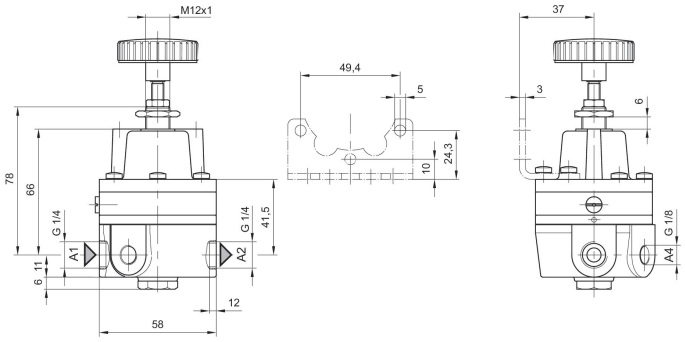
Dimensions in mm



A1 = input
A2 = output
A4 = output

0821302446

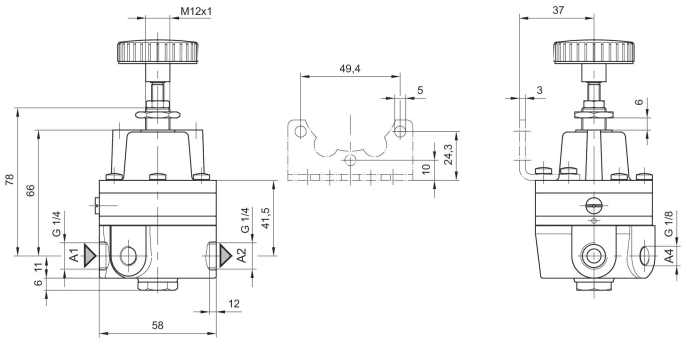
Dimensions in mm



A1 = input
A2 = output
A4 = output

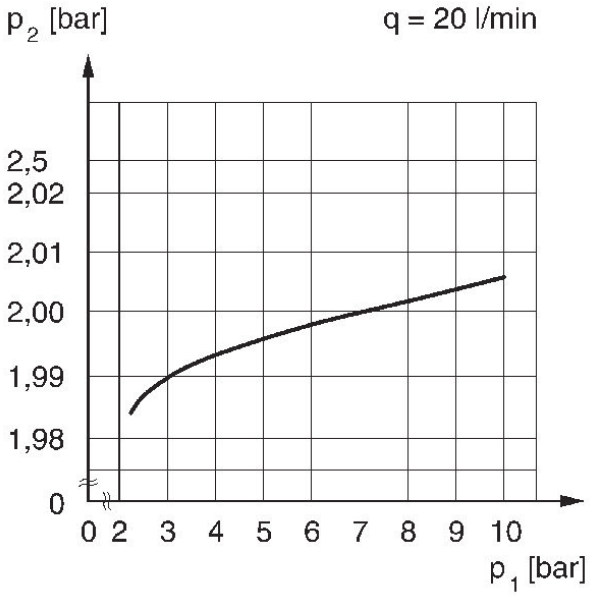
0821302447

Dimensions in mm



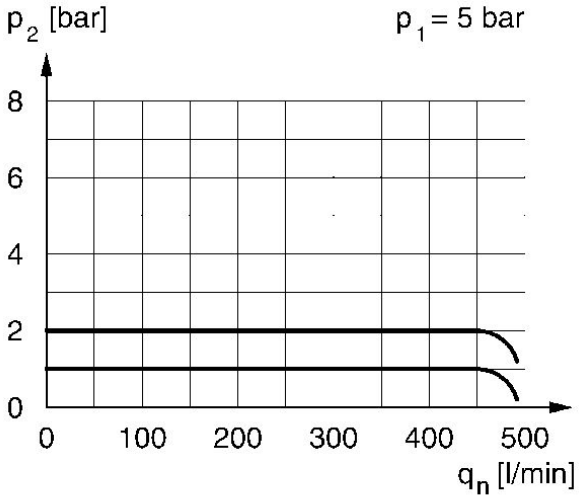
A1 = input
A2 = output
A4 = output

Pressure characteristics curve



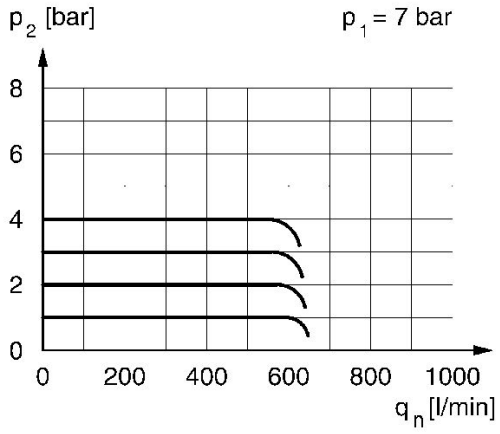
p1 = Working pressure
p2 = Secondary pressure
q = flow rate

Flow rate characteristic, p2 = 0,05 - 2 bar



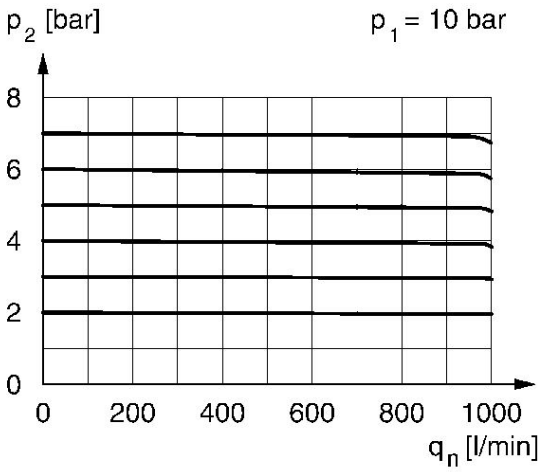
p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

Flow rate characteristic, p2 = 0,05 - 4 bar



p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

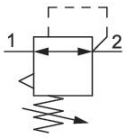
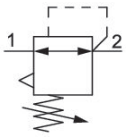
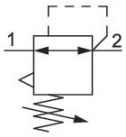
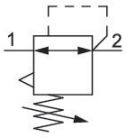
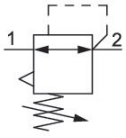
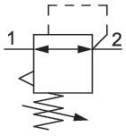
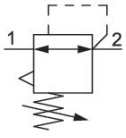
Flow rate characteristic, p2 = 0,05 - 7 bar



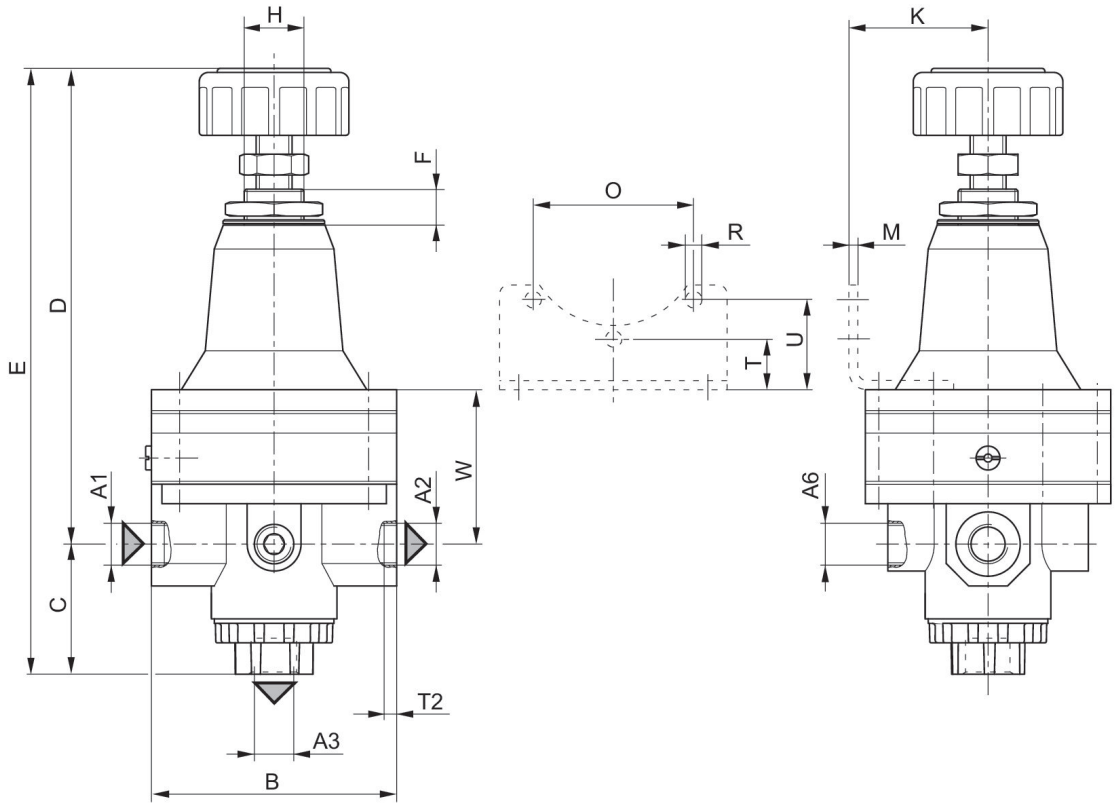
p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

Precision pressure regulator, Series PR1-RGP

Activation: Mechanical
Actuating element: Precision pressure regulator
Mounting orientation: Any
Ambient temperature min./max.: -35 °C ... 60 °C
Working pressure min./max.: 0.5 bar ... 16 bar

	Port	Nominal flow [l/min]	Working pressure min./max. [bar]	Min. regula-tion rangep2 [bar]	Max. regula-tion rangep2 [bar]	Part No.
	G 1/4	2200	0.5, 16	0.05	3	0821302565
	G 1/4	2600	0.5, 16	0.05	5	0821302566
	G 1/4	3000	0.5, 16	0.05	7	0821302567
	G 3/8	3200	0.5, 16	0.05	3	0821302554
	G 3/8	4000	0.5, 16	0.05	5	0821302555
	G 3/8	5000	0.5, 16	0.05	7	0821302556
	G 1/2	6500	0.5, 16	0.05	7	0821302173

Dimensions



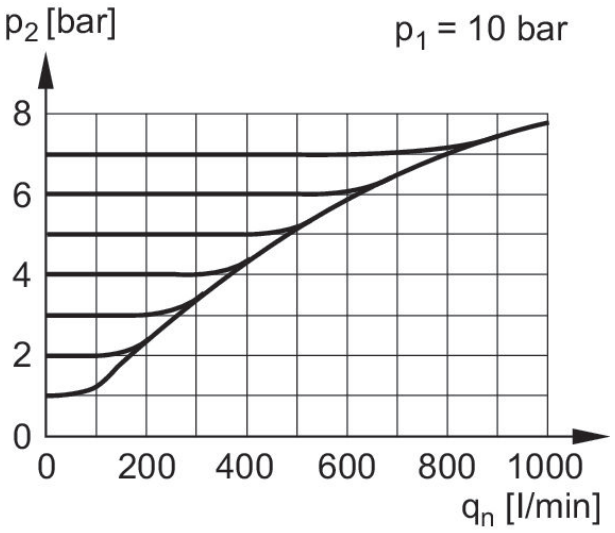
A1 = input
A2 = output
A3 = relieving exhaust
A6 = output

Dimensions in mm

Part No.	A1	A2	A3	A6	B	C	D	E	F
0821302565	G 1/4	G 1/4	G 3/8	G 1/4	82	43.5	159	202.5	10
0821302566	G 1/4	G 1/4	G 3/8	G 1/4	82	43.5	159	202.5	10
0821302567	G 1/4	G 1/4	G 3/8	G 1/4	82	43.5	159	202.5	10
0821302554	G 3/8	G 3/8	G 3/8	G 1/4	82	43.5	159	202.5	10
0821302555	G 3/8	G 3/8	G 3/8	G 1/4	82	43.5	159	202.5	10
0821302556	G 3/8	G 3/8	G 3/8	G 1/4	82	43.5	159	202.5	10
0821302173	G 1/2	G 1/2	G 3/8	G 1/4	82	43.5	159	202.5	10

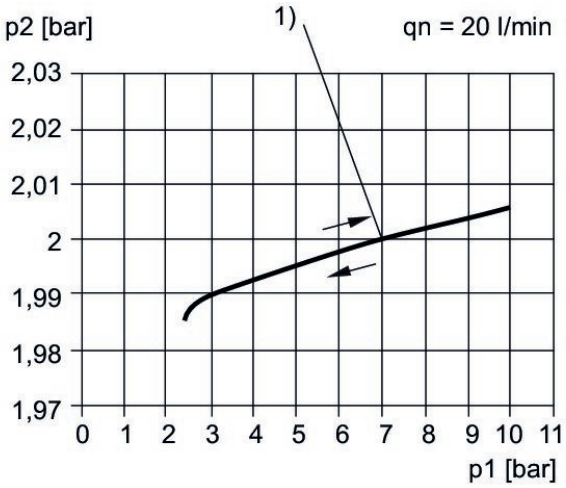
Part No.	H	K	M	O	R	T	T2	U	W
0821302565	M20x1,5	47	3	54	4	17	16	30	51.6
0821302566	M20x1,5	47	3	54	4	17	16	30	51.6
0821302567	M20x1,5	47	3	54	4	17	16	30	51.6
0821302554	M20x1,5	47	3	54	4	17	16	30	51.6
0821302555	M20x1,5	47	3	54	4	17	16	30	51.6
0821302556	M20x1,5	47	3	54	4	17	16	30	51.6
0821302173	M20x1,5	47	3	54	4	17	16	30	51.6

exhaust characteristics (contact limit < 10 mbar)



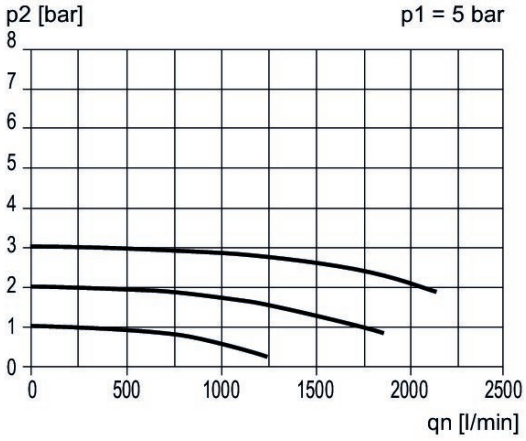
p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

Hysteresis



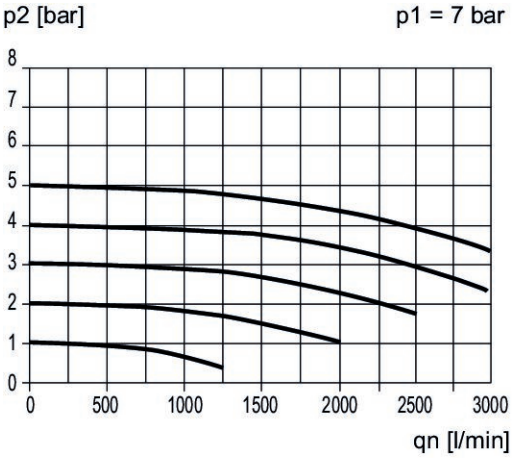
p1 = Working pressure
p2 = Secondary pressure
q = flow rate
1) * starting point

Flow rate characteristic



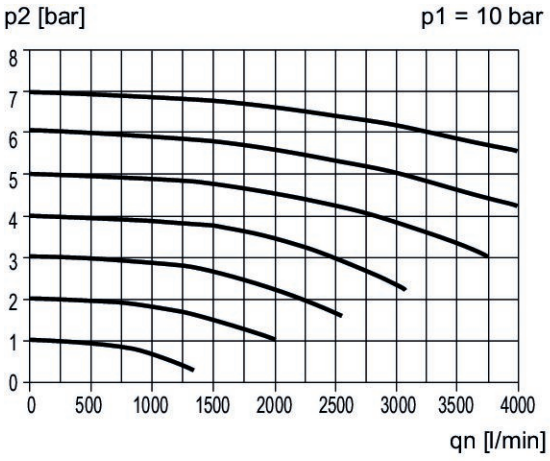
p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

Flow rate characteristic



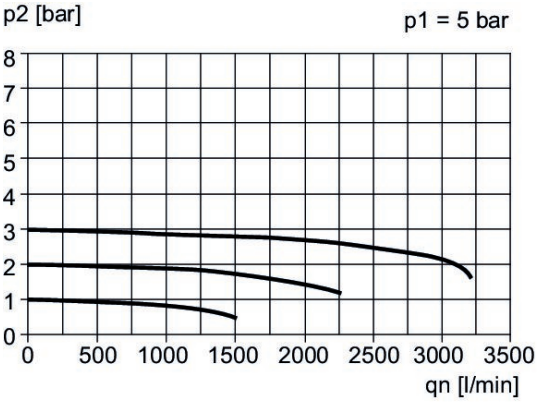
p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

Flow rate characteristic



p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

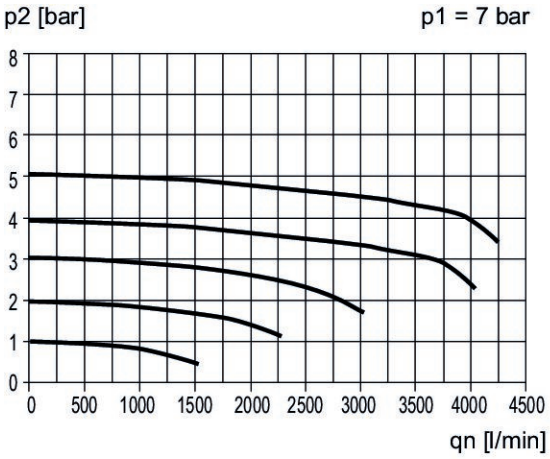
Flow rate characteristic



p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

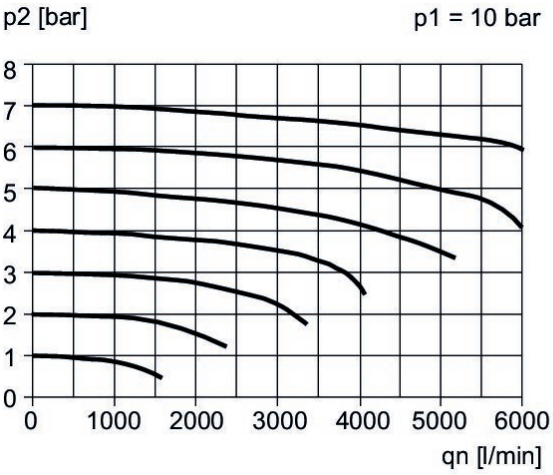
Flow rate characteristic

0821302555



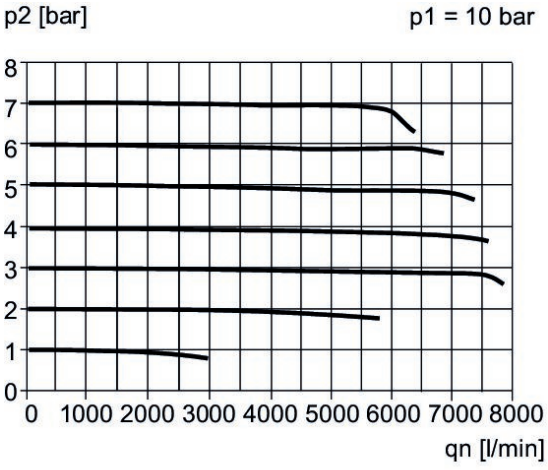
p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

Flow rate characteristic



p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

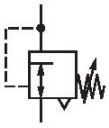
Flow rate characteristic



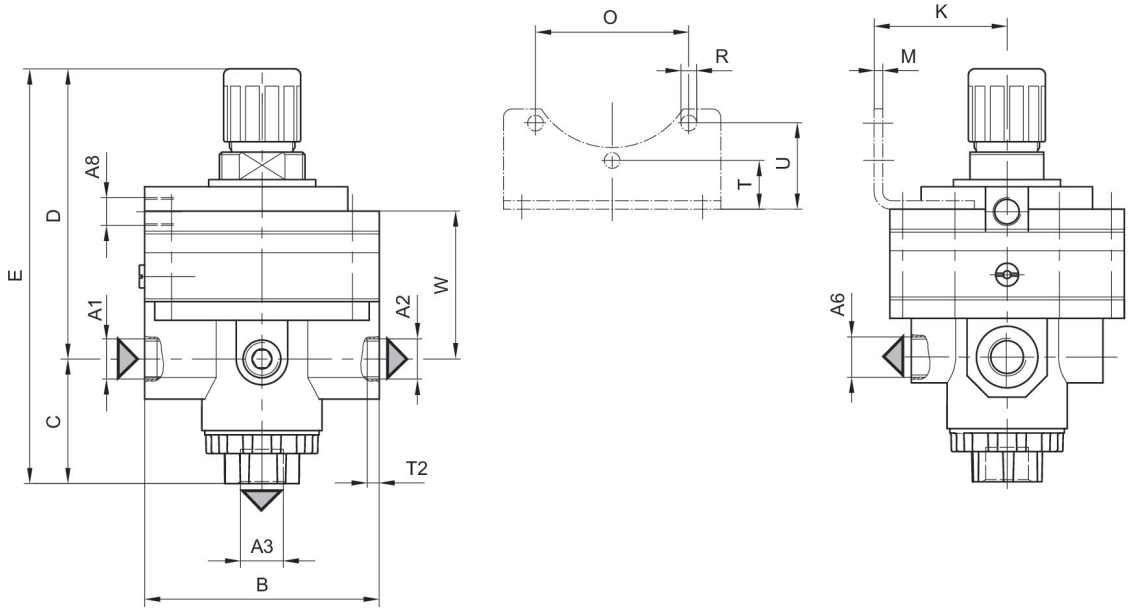
p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

Precision pressure regulator, Series PR1-RGP

Activation: Pneumatically
Actuating element: Precision pressure regulator
Mounting orientation: Any
Flow: 5600 l/min
Max. control pressure: 10 bar
Ambient temperature min./max.: -35 °C ... 60 °C
Working pressure min./max.: 0.5 bar ... 16 bar

	Port	Nominal flow [l/min]	Working pressure min./max. [bar]	Min. regula-tion rangep2 [bar]	Max. regula-tion rangep2 [bar]	Part No.
	G 1/2	5600	0.5, 16	0.05	10	0821302165

Dimensions



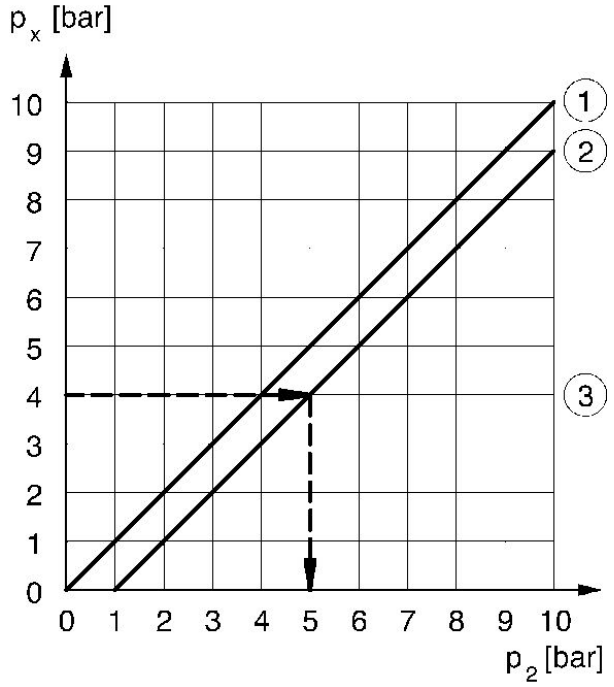
A1 = input
A2 = output
A3 = relieving exhaust
A6 = output

Dimensions in mm

Part No.	A1	A2	A3	A6	A8	B	C	D	E
0821302165	G 1/2	G 1/2	G 3/8	G 1/4	G 1/8	82	43.5	100.5	144

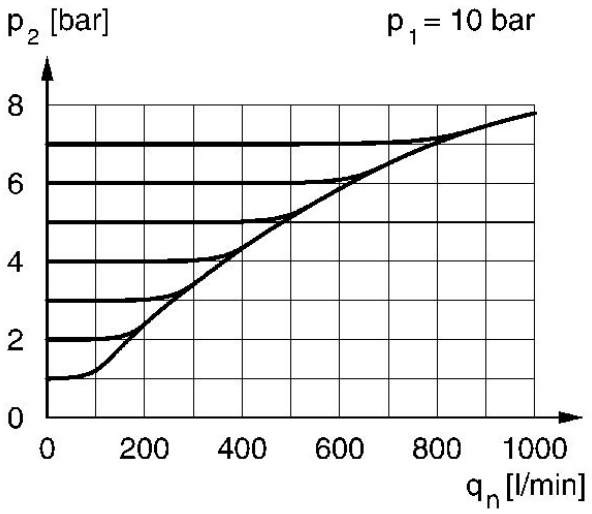
Part No.	J	K	M	O	R	T	T2	U	W
0821302165	16	47	3	54	4	17	16	30	51

control pressure characteristic



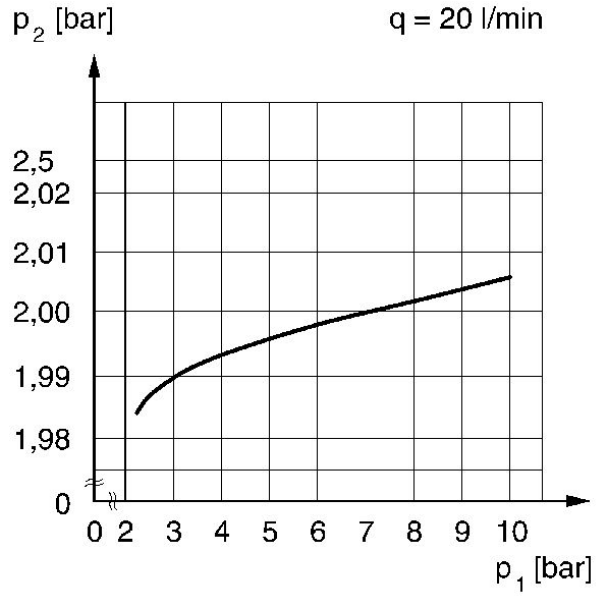
px = control pressure
p2 = Secondary pressure
1) Pneumatically operated
2) Man. adjustment up to 1 bar

exhaust characteristics (contact limit < 10 mbar)



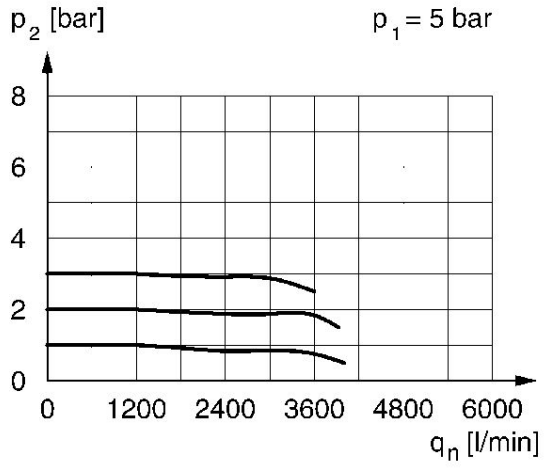
p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

Pressure characteristics curve



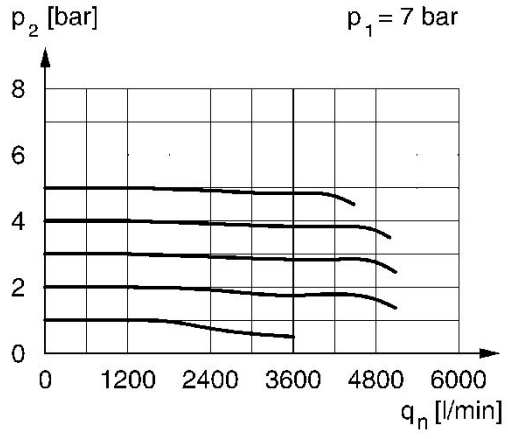
p1 = Working pressure
p2 = Secondary pressure
q = flow rate

Flow rate characteristic, p2 = 0,05 - 3 bar



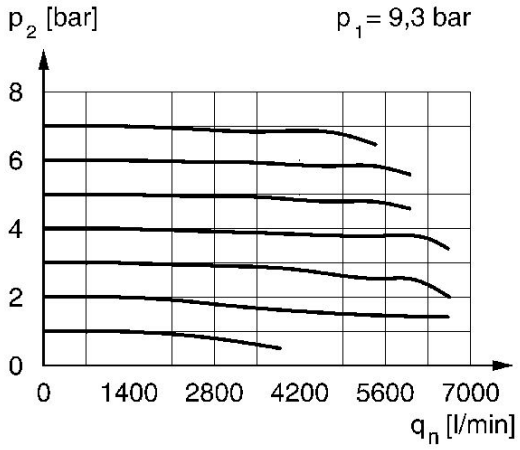
p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

Flow rate characteristic, p2 = 0,05 - 5 bar



p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

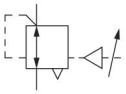
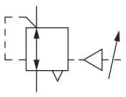
Flow rate characteristic, p2 = 0,05 - 7 bar



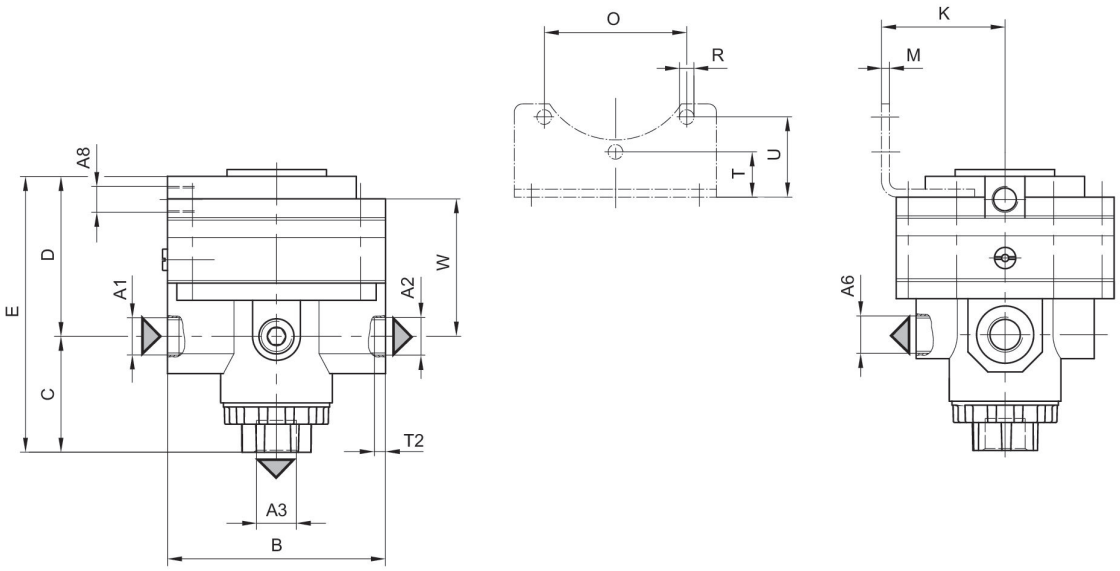
p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

Precision pressure regulator, Series PR1-RGP

Activation: Pneumatically
Actuating element: Precision pressure regulator
Mounting orientation: Any
Flow: 5600 l/min
Temperature resistance: -30 °C cold-resistant
Max. control pressure: 10 bar
Ambient temperature min./max.: -35 °C ... 60 °C
Working pressure min./max.: 0.5 bar ... 16 bar

	Port	Nominal flow [l/min]	Working pressure min./max. [bar]	Min. regulation rangep2 [bar]	Max. regulation rangep2 [bar]	Part No.
	G 3/8	5600	0.5, 16	0.05	10	0821302052
	G 1/2	5600	0.5, 16	0.05	10	0821302055

Dimensions



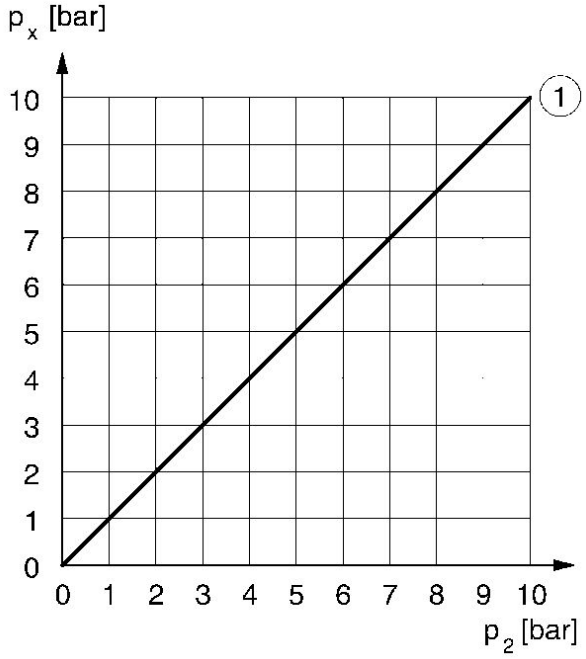
A1 = input
A2 = output
A3 = relieving exhaust
A6 = pressure gauge connection
A8 = Pilot connection

Dimensions in mm

Part No.	A1	A2	A3	A6	A8	B	C	D	E
0821302052	G 3/8	G 3/8	G 3/8	G 1/4	G 1/8	82	43.5	65.5	108
0821302055	G 1/2	G 1/2	G 3/8	G 1/4	G 1/8	82	43.5	65.5	108

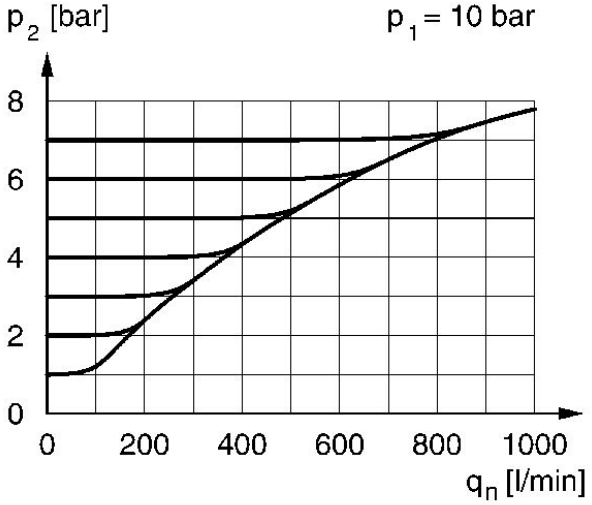
Part No.	K	M	O	R	T	T2	U	W
0821302052	47	3	54	4	17	16	30	51
0821302055	47	3	54	4	17	16	30	51

control pressure characteristic



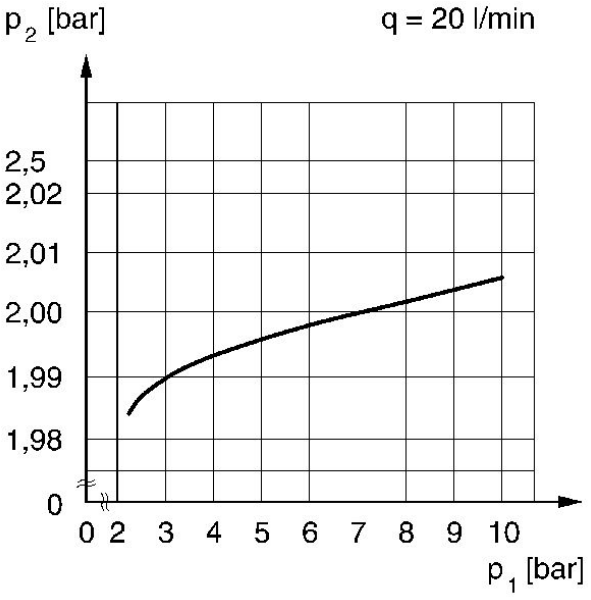
px = control pressure
p2 = Secondary pressure
1) Pneumatically operated

exhaust characteristics (contact limit < 10 mbar)



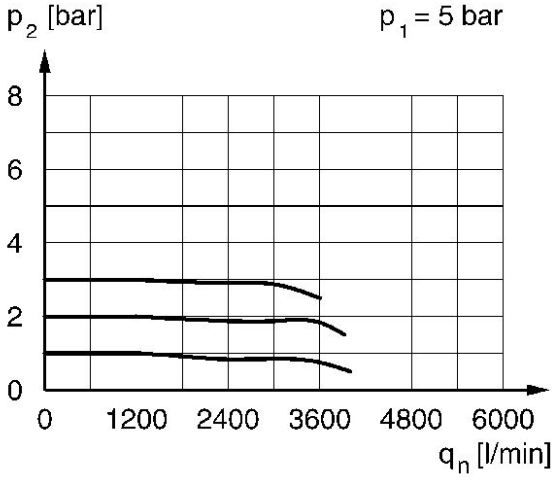
p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

Pressure characteristics curve



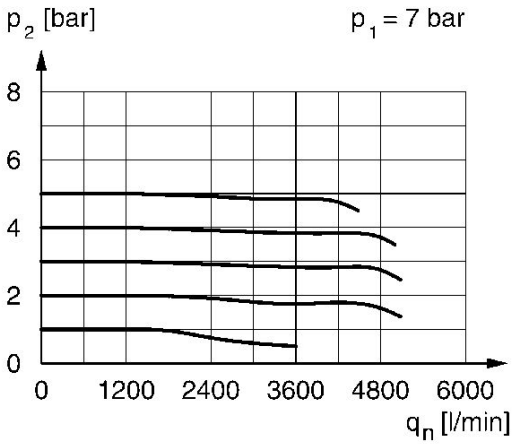
p1 = Working pressure
p2 = Secondary pressure
q = flow rate

Flow rate characteristic, p2 = 0,05 - 3 bar



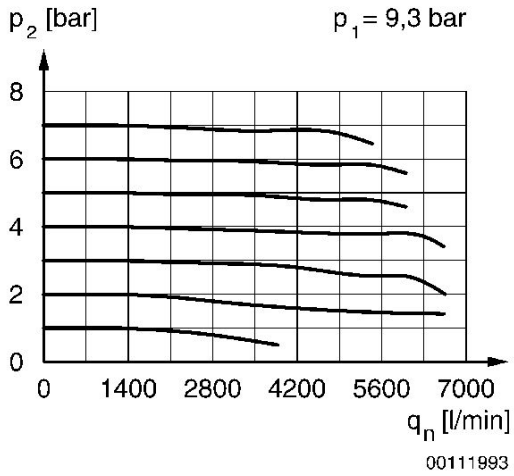
p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

Flow rate characteristic, p2 = 0,05 - 5 bar



p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

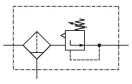
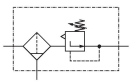
Flow rate characteristic, p2 = 0,05 - 7 bar



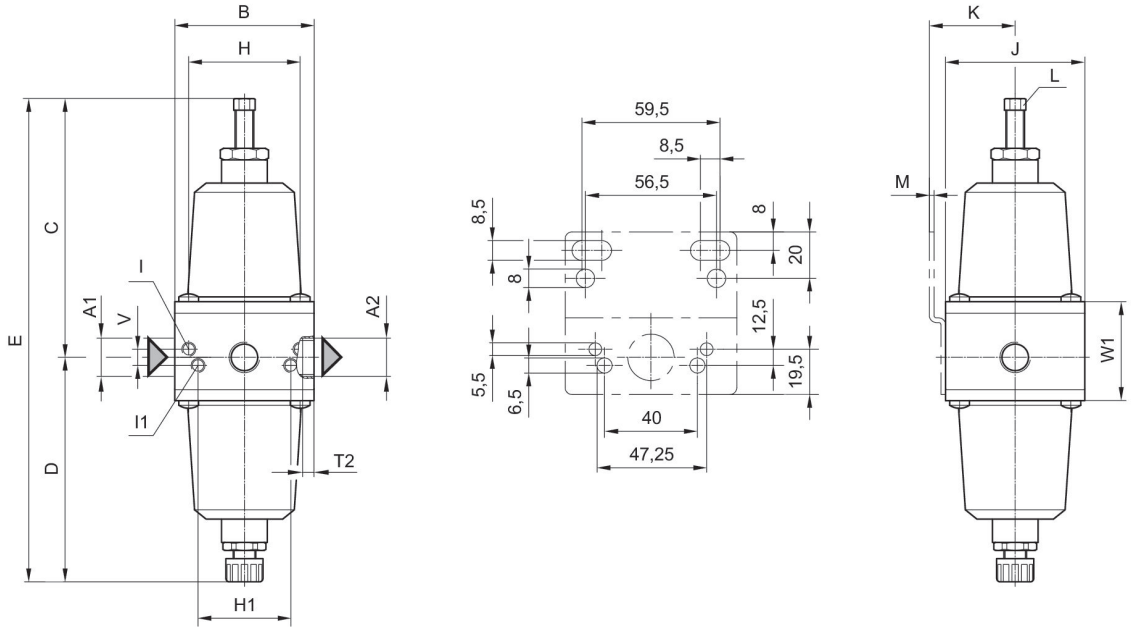
p1 = Working pressure
p2 = Secondary pressure
qn = Nominal flow

Precision filter pressure regulator, Series PR1-FRE

Mounting orientation: vertical
Filter element: exchangeable
Flow: 750 l/min
Filter porosity: 10 µm
Filter reservoir volume: 11.5 cm³
Condensate drain: Manual
Ambient temperature min./max.: -10 °C ... 60 °C
Working pressure min./max.: 0.2 bar ... 16 bar

	Port	Conden-sate drain	Reservoir	Min. regula-tion range [bar]	Max. regula-tion range [bar]	Part No.
	G 1/4	Manual	Metal reser-voir without window	0.1	2	0821300410
	G 1/4	Manual	Metal reser-voir without window	0.2	5	0821300411

Dimensions



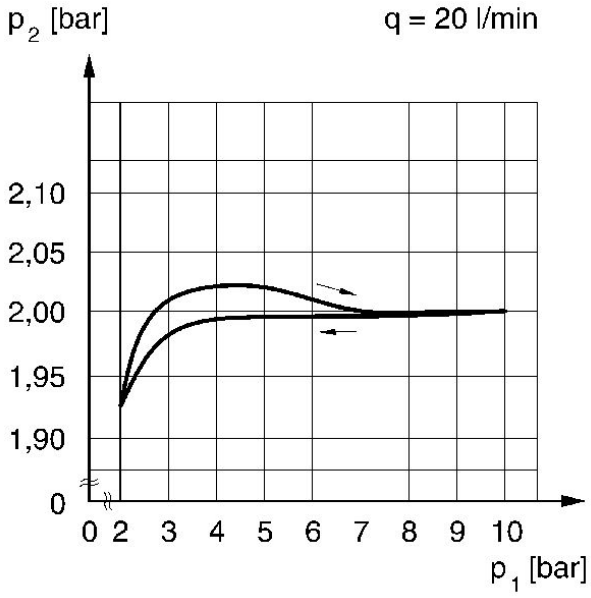
A1 = input A2 = output

Dimensions in mm

Part No.	A1	A2	B	C	D	E	H	H1	I
0821300410	G 1/4	G 1/4	60	120	96	216	48	40	M5
0821300411	G 1/4	G 1/4	60	120	96	216	48	40	M5

Part No.	I1	J	K	L	M	T2	V	W1
0821300410	M6	60	37	8	2	6	7	42.5
0821300411	M6	60	37	8	2	6	7	42.5

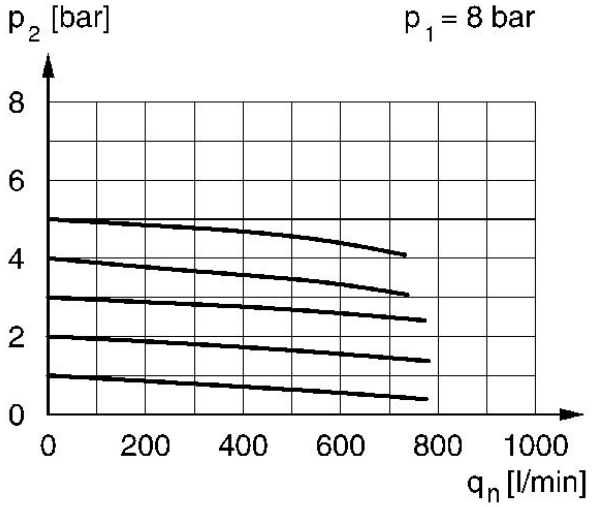
Pressure characteristics curve



p1 = working pressure p2 = secondary pressure q = flow rate

Flow rate characteristic, p2 = 0,05 - 7 bar

p2 = 0,2 - 5 bar

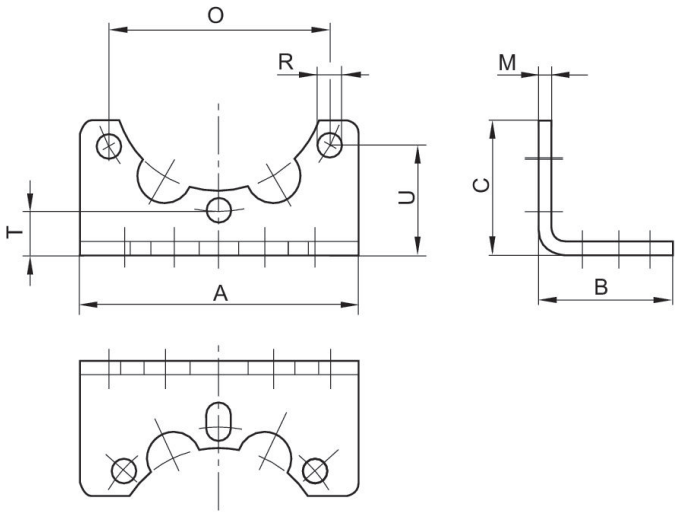


p1 = Working pressure p2 = Secondary pressure qn = Nominal flow

Mounting bracket, Series PR1-MBR-...-W02

Material	Part No.
Steel, chrome-plated	1821332055
Steel, chrome-plated	1821332056

Dimensions

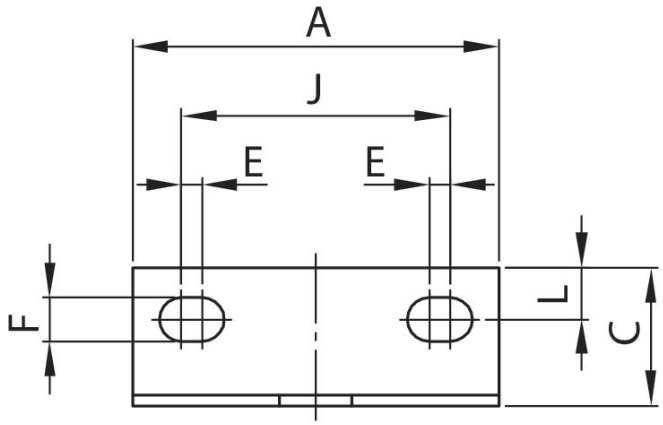


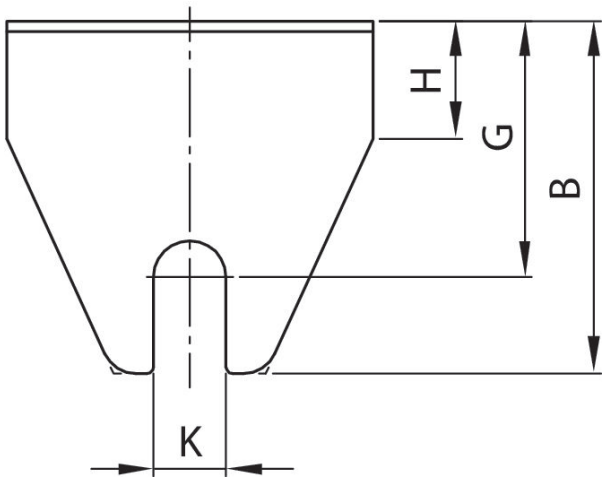
Part No.	A	B	C	M	O	R	T	U
1821332055	76	35	35	3	54	4	17	30
1821332056	62	30	30	3	49.4	5.5	13.5	24.5

Mounting bracket, Series PR1-MBR-...-W02

Material	Part No.
Steel, chrome-plated	R412010482

Dimensions





Part No.	A	B	C	E	F	G	H	J	K
R412010482	53	51	20	3	6.4	37	17	39	10.5

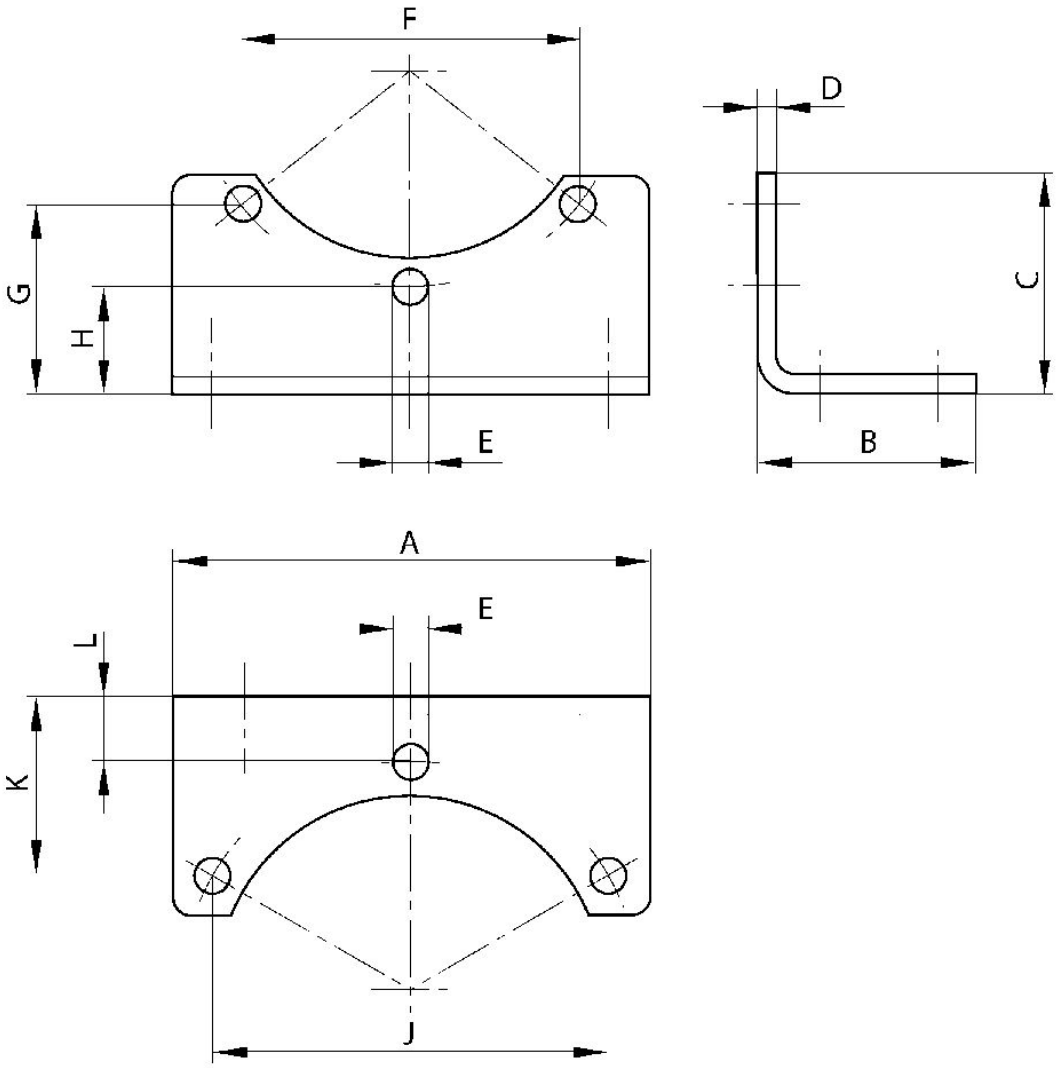
Part No.	L
R412010482	7.5

Mounting bracket, Series MU1/PR1-MBR-...-W02

Ambient temperature min./max.: -40 °C ... 60 °C

Material	Part No.
Steel, chrome-plated	R412004872

Dimensions



Part No.		A	B	C	D	E	F	G	H
R412004872	G1	76	35	35	3	5.5	53.6	30.1	17

Part No.	J	K	L
R412004872	63.2	28.8	10.5

Pressure gauge, Series PG1-SAS

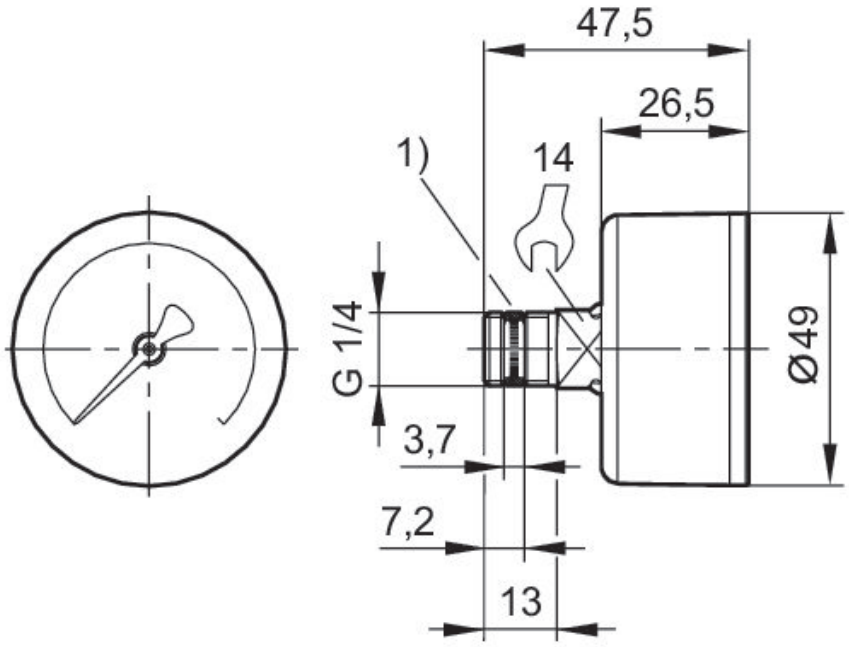
Type: Bourdon tube pressure gauge, Back port
Background color: Black
Scale color: White
Material viewing window: Polystyrene
Main scale unit (outside): bar
Secondary scale unit (inside): psi
Standardization: EN 837-1

Nominal diameter [mm]	Port	Min. main scale range of application [bar]	Max. main scale range of application [bar]	Min. main scale display range [bar]	Max. main scale display range [bar]	Min. working pressure [bar]	Max. working pressure [bar]	Part No.
40	G 1/8	0	1.2	0	1.6	0	1.6	R412003853
40	G 1/8	0	2	0	2.5	0	2.5	R412003854
40	G 1/8	0	3.2	0	4	0	4	R412003855
40	G 1/8	0	4	0	6	0	6	R412003856
40	G 1/8	0	8	0	10	0	10	R412003857
40	G 1/8	0	12	0	16	0	16	R412003858
40	G 1/4	0	1.2	0	1.6	0	1.6	R412004407
40	G 1/4	0	2	0	2.5	0	2.5	R412004408
40	G 1/4	0	3.2	0	4	0	4	R412004409
40	G 1/4	0	4	0	6	0	6	R412004410
40	G 1/4	0	8	0	10	0	10	R412004411
40	G 1/4	0	12	0	16	0	16	R412004412
50	G 1/4	0	1.2	0	1.6	0	1.6	R412004413
50	G 1/4	0	2	0	2.5	0	2.5	R412004414
50	G 1/4	0	3.2	0	4	0	4	R412004415
50	G 1/4	0	4	0	6	0	6	R412004416
50	G 1/4	0	8	0	10	0	10	R412004417
50	G 1/4	0	12	0	16	0	16	R412004418
50	G 1/4	0	20	0	25	0	25	R412007898
63	G 1/4	0	1.2	0	1.6	0	1.6	R412004419
63	G 1/4	0	2	0	2.5	0	2.5	R412004420
63	G 1/4	0	3.2	0	4	0	4	R412004421
63	G 1/4	0	4	0	6	0	6	R412004422

Nominal diameter [mm]	Port	Min. main scale range of application [bar]	Max. main scale range of application [bar]	Min. main scale display range [bar]	Max. main scale display range [bar]	Min. working pressure [bar]	Max. working pressure [bar]	Part No.
63	G 1/4	0	8	0	10	0	10	R412004423
63	G 1/4	0	12	0	16	0	16	R412004424

Scale value	Certification	Part No.
0.05		R412003853
0.1		R412003854
0.1		R412003855
0.2		R412003856
0.2		R412003857
0.5		R412003858
0.05		R412004407
0.1		R412004408
0.1		R412004409
0.2		R412004410
0.2		R412004411
0.5		R412004412
0.05		R412004413
0.1		R412004414
0.1		R412004415
0.2		R412004416
0.2	Suitable for ATEX	R412004417
0.5	Suitable for ATEX	R412004418
1		R412007898
0.05		R412004419
0.1		R412004420
0.1		R412004421
0.2		R412004422
0.2		R412004423
0.5		R412004424

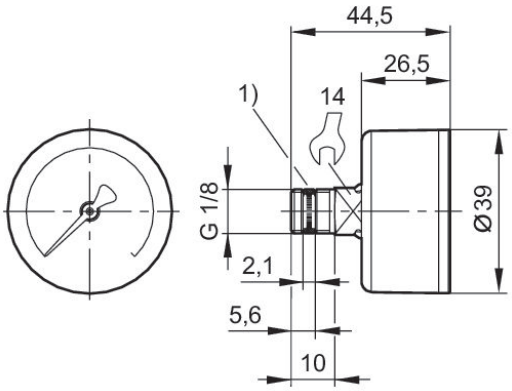
Dimensions in mm



1) Gasket thread

R412003853, R412003854, R412003855, R412003856, R412003857, R412003858

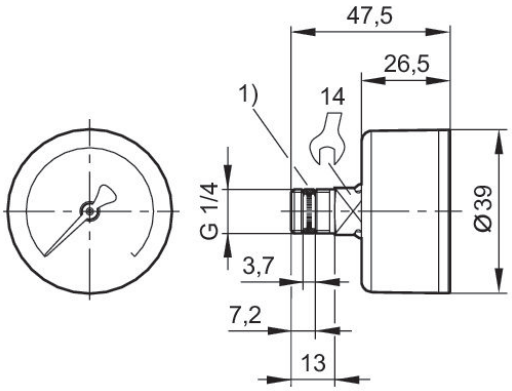
Dimensions in mm



1) Gasket thread

R412004407, R412004408, R412004409, R412004410, R412004411, R412004412

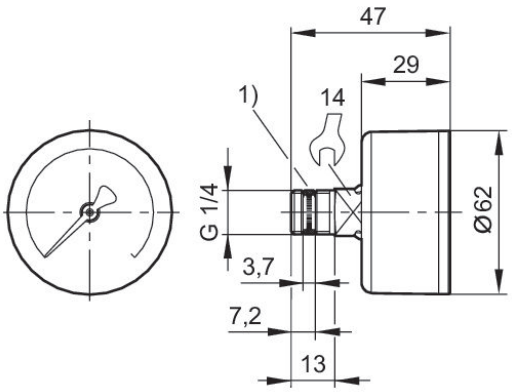
Dimensions in mm



1) Gasket thread

R412004419, R412004420, R412004421, R412004422, R412004423, R412004424

Dimensions in mm



1) Gasket thread

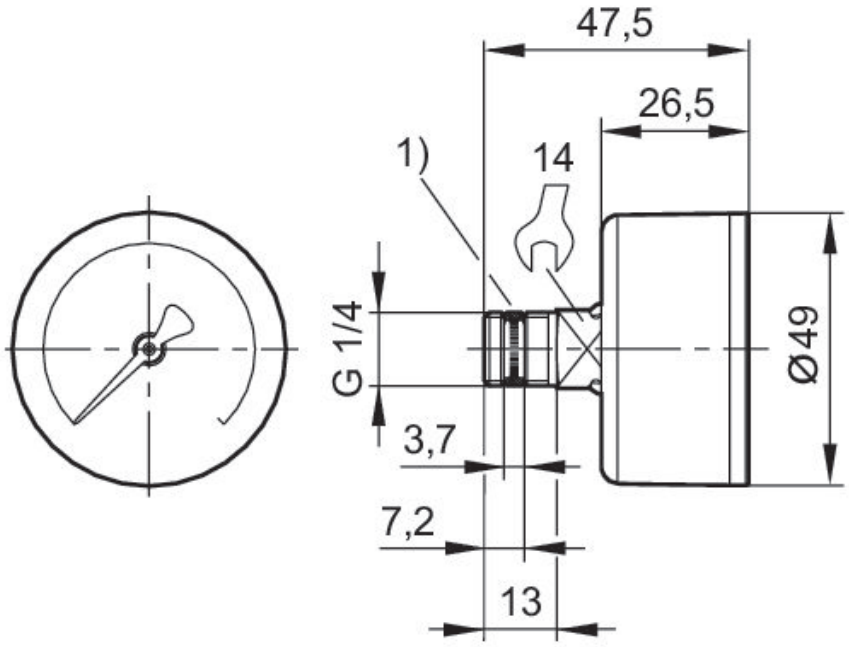
Pressure gauge, Series PG1-SAS-ADJ

Type: with adjustable work area display, Back port
Background color: Black
Scale color: White
Material viewing window: Polystyrene
Main scale unit (outside): bar
Secondary scale unit (inside): psi
Standardization: EN 837-1

Nominal diameter [mm]	Port	Min. main scale range of application [bar]	Max. main scale range of application [bar]	Min. main scale display range [bar]	Max. main scale display range [bar]	Min. working pressure [bar]	Max. working pressure [bar]	Part No.
50	G 1/4	0	1.2	0	1.6	0	1.6	R412007867
50	G 1/4	0	2	0	2.5	0	2.5	R412007868
50	G 1/4	0	3.2	0	4	0	4	R412007869
50	G 1/4	0	4	0	6	0	6	R412007870
50	G 1/4	0	8	0	10	0	10	R412007871
50	G 1/4	0	12	0	16	0	16	R412007872

Scale value	Part No.
0.05	R412007867
0.1	R412007868
0.1	R412007869
0.2	R412007870
0.2	R412007871
0.5	R412007872

Dimensions in mm



1) Gasket thread

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