

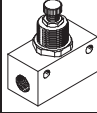

One-way flow control valves GR/GRA, in-line installation



One-way flow control valves GR/GRA, in-line installation

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Product range overview and type codes

Product range overview									
Version	Valve function	Version	Type	Connection direction	Pneumatic connection 1	Pneumatic connection 2	qnN ¹⁾ [l/min]	Adjustment component	→ Page/ Internet
In-line installation	Metal								
	One-way flow control function		GR/GRA	Inline	M3, M5, G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	M3, M5, G ¹ / ₈ , G ¹ / ₄ , G ³ / ₈ , G ¹ / ₂ , G ³ / ₄	29.5 ... 3,300	Knurled screw	3
	Polymer								
	One-way flow control function		GR	Inline	QS-3, QS-4, QS-6, QS-8	QS-3, QS-4, QS-6, QS-8	25 ... 225	Knurled screw	10

1) Standard nominal flow rate in direction of flow control.

Type codes

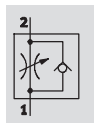
		GR	-	QS-4	-	LF	-	
Type								
GR	One-way flow control valve, in-line installation							
GRA	One-way flow control valve, in-line installation							
Pneumatic connection 1 and 2								
M3	Female thread M3							
M5	Female thread M5							
1/8	Female thread G ¹ / ₈							
1/4	Female thread G ¹ / ₄							
3/8	Female thread G ³ / ₈							
1/2	Female thread G ¹ / ₂							
3/4	Female thread G ³ / ₄							
QS-3	Push-in connector for tubing O.D. 3 mm							
QS-4	Push-in connector for tubing O.D. 4 mm							
QS-6	Push-in connector for tubing O.D. 6 mm							
QS-8	Push-in connector for tubing O.D. 8 mm							
Flow rate characteristic								
LF	Low flow							
Generation								
B	B series							

One-way flow control valves GR/GRA, in-line installation

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Technical data – Female thread, metal

One-way flow control function



Flow rate

29.5 ... 3,300 l/min

Temperature range

–20 ... +75 °C

Pressure

0.1 ... 15 bar



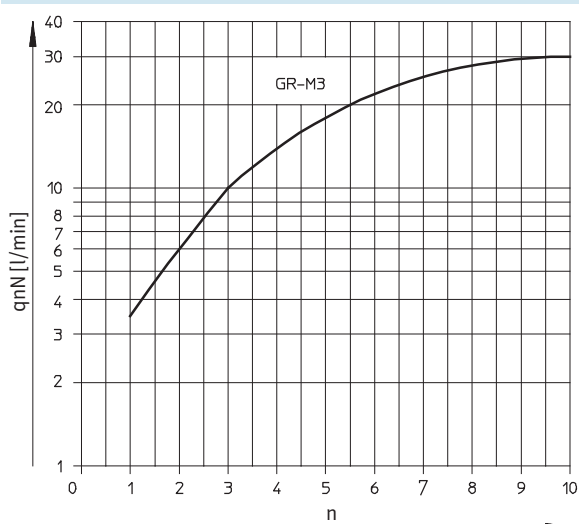
General technical data							
Valve function	One-way flow control function						
Pneumatic connection 2	M3	M5	G1/8	G1/4	G3/8	G1/2	G3/4
Pneumatic connection 1	M3	M5	G1/8	G1/4	G3/8	G1/2	G3/4
Adjustment component	Knurled screw						
Type of mounting	Via through-hole						
	Front panel mounting						
Mounting position	Any						

Note: This product conforms to ISO 1179-1 and ISO 228-1

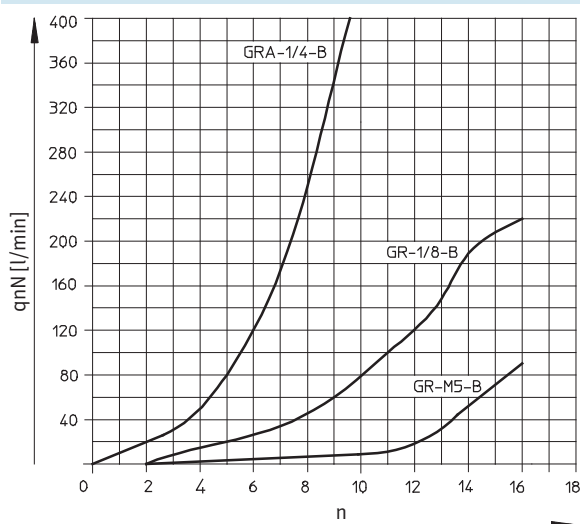
Operating and environmental conditions							
Pneumatic connection 2	M3	M5	G1/8	G1/4	G3/8	G1/2	G3/4
Operating pressure [bar]	0.3 ... 8	0.5 ... 10		0.1 ... 10			0.3 ... 15
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [6:4:4]	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]				Compressed air in accordance with ISO 8573-1:2010 [7:--:--]	
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)						
Ambient temperature [°C]	−10 ... +60	−20 ... +60		−20 ... +75			−10 ... +60
Temperature of medium [°C]	−10 ... +60	−20 ... +60		−20 ... +75			−10 ... +60
Storage temperature [°C]	−10 ... +40	−20 ... +60		−20 ... +75			−10 ... +60

Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of turns of the adjusting screw n

GR-M3



GR-M5-B, GR-1/8-B, GRA-1/4-B



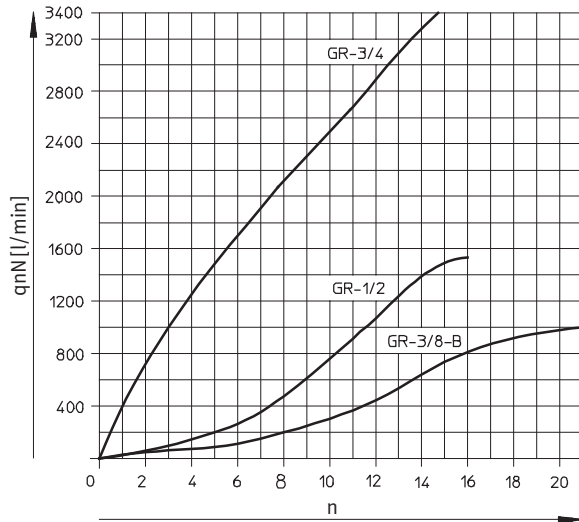
One-way flow control valves GR/GRA, in-line installation

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Technical data – Female thread, metal

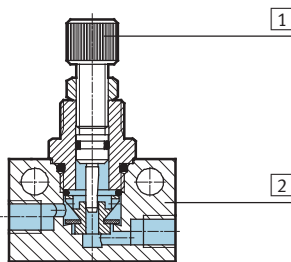
Standard nominal flow rate q_{nN} at 6 \rightarrow 5 bar as a function of turns of the adjusting screw n

GR-3/8-B, GR-1/2, GR-3/4



Materials

Sectional view



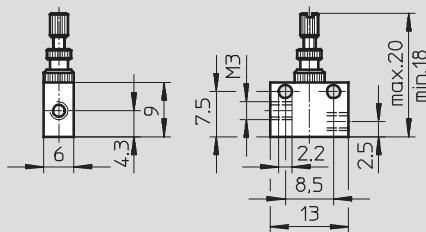
One-way flow control valve

1	Adjusting screw	Brass
2	Housing	GR-M3, GR-M5-B, GR-1/8-B, GR-3/4: Wrought aluminium alloy GRA-1/4-B, GR-3/8-B, GR-1/2: Die-cast zinc
–	Seals	NBR
Note on materials		RoHS-compliant

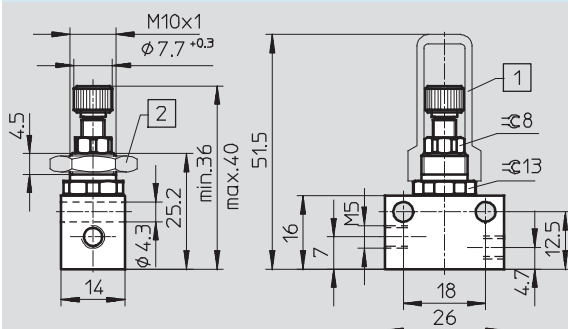
Dimensions

Download CAD Data www.festo.com/us/cad

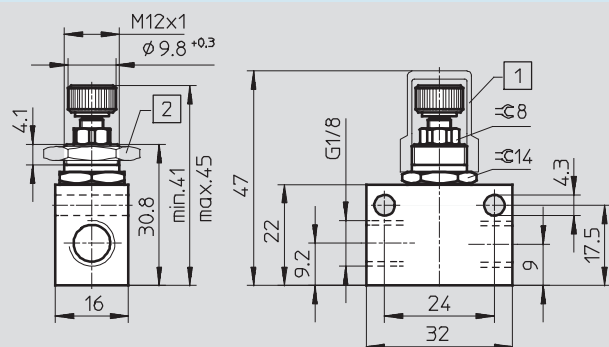
GR-M3



GR-M5-B



GR-1/8-B



Note: This product conforms to ISO 1179-1 and ISO 228-1

1 Cover cap GRK → 8

2 Hex nut GRM → 8

One-way flow control valves GR/GRA, in-line installation

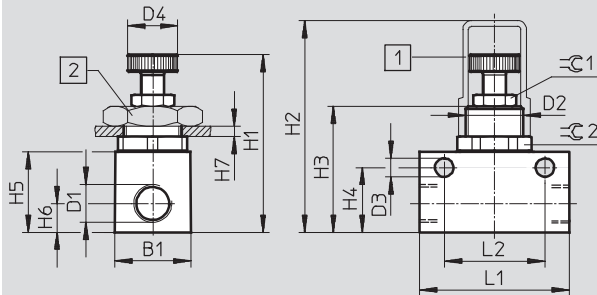
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Technical data – Female thread, metal

Dimensions

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GRA-1/4-B



Note: This product conforms to ISO 1179-1 and ISO 228-1

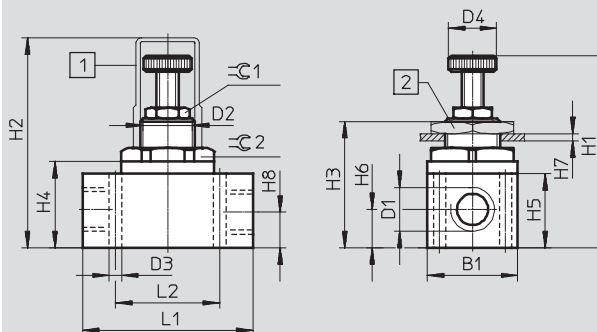
- 1 Cover cap GRK → 8 2 Hex nut GRM → 8

Type	Connection	B1	D2	D3 Ø	D4 Ø	H1		H2	H3	H4	H5	H6	H7 max.	L1	L2	≤C 1	≤C 2
						min.	max.										
GRA-1/4-B	G1/4	26.5	M20x1.5	6.4	17.4	56	62	73.5	44	22.5	28	10	3.5	52	35 ±0.1	13	24

Dimensions

Download CAD Data → www.festo.com/us/cad

GR-3/8-B



Note: This product conforms to ISO 1179-1 and ISO 228-1

- 1 Cover cap GRK → 8 2 Hex nut GRM → 8

Type	Connection	B1	D2	D3 Ø	D4 Ø	H1		H2	H3	H4	H5	H6	H7 max.	H8	L1	L2	≤C 1	≤C 2
						min.	max.											
GR-3/8-B	G3/8	33	M20x1.5	4.5	17.5	62.5	74	76.5	46	31.5	27	14	3.5	13	62	38	13	30

One-way flow control valves GR/GRA, in-line installation

Technical data – Female thread, metal

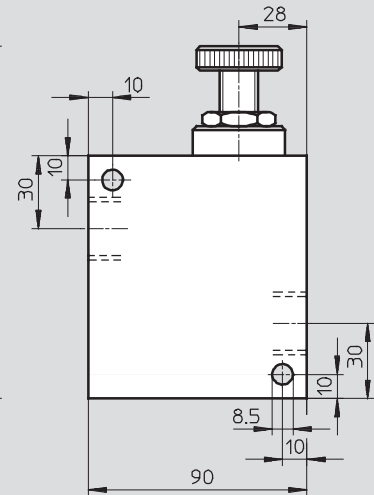
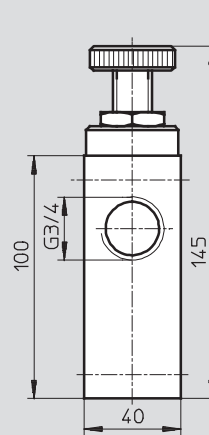
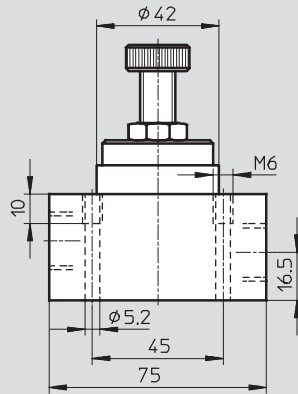
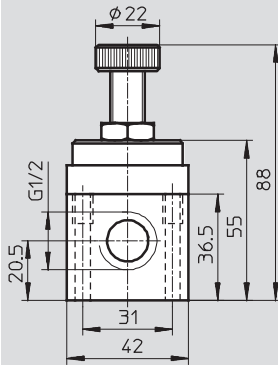
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Dimensions

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GR-1/2

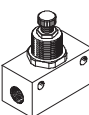
GR-3/4



Note: This product conforms to ISO 1179-1 and ISO 228-1

Note: This product conforms to ISO 1179-1 and ISO 228-1

Ordering data – One-way flow control function

	Pneumatic connection		Standard nominal flow rate q _{nN} at 6 → 5 bar		Weight	Part No.	Type
			in direction of flow control	in non-return direction			
	2	1	[l/min]	[l/min]			
Knurled screw							
	M3	M3	29.5	26 ... 27.5	2.5	15899	GR-M3
	M5	M5	94	115	21	151213	GR-M5-B
	G1/8	G1/8	220	217	34	151215	GR-1/8-B
	G1/4	G1/4	420	780	180	6509	GRA-1/4-B
	G3/8	G3/8	1,010	1,150	225	6308	GR-3/8-B
	G1/2	G1/2	1,620	2,760	517	3720	GR-1/2
	G3/4	G3/4	3,300	4,800	938	2103	GR-3/4

One-way flow control valves GR/GRA, in-line installation

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Accessories

Hex nut GRM

For front panel mounting

Material: Steel



Ordering data			
For type	Description	Part No.	Type
GR-M5-B	Thread M10x1	6444	GRM-M5
GR-1/8-B	Thread M12x1	2107	GRM-1/8
GRA-1/4-B, GR-3/8-B	Thread M20x1.5	204596	GRM-3/8

Cover cap GRK

Material: PP



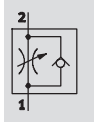
Ordering data			
For type	Description	Part No.	Type
GR-M5-B	Thread M10x1	6436	GRK-M5
GR-1/8-B	Thread M12x1	2105	GRK-1/8
GRA-1/4-B, GR-3/8-B	Thread M20x1.5	6309	GRK-3/8-B

One-way flow control valves GR, in-line installation

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Technical data – Push-in connector QS, polymer

One-way flow control function



Flow rate

25 ... 225 l/min

Temperature range

–10 ... +60 °C

Pressure

0.2 ... 10 bar



General technical data				
Valve function	One-way flow control function			
Pneumatic connection 2	QS-3	QS-4	QS-6	QS-8
Pneumatic connection 1	QS-3	QS-4	QS-6	QS-8
Adjustment component	Knurled screw			
Type of mounting	Via through-hole			
	Front panel mounting			
	Via accessories			
Mounting position	Any			

Operating and environmental conditions	
Operating pressure [bar]	0.2 ... 10
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)
Ambient temperature [°C]	–10 ... +60
Temperature of medium [°C]	–10 ... +60
Storage temperature [°C]	–10 ... +40

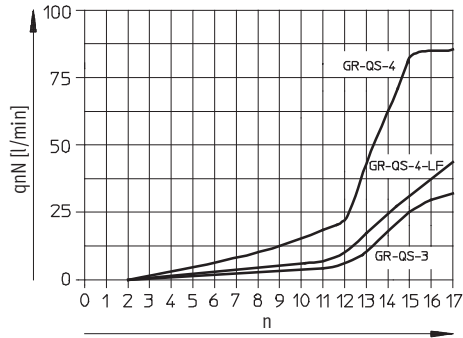
One-way flow control valves GR, in-line installation

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Technical data – Push-in connector QS, polymer

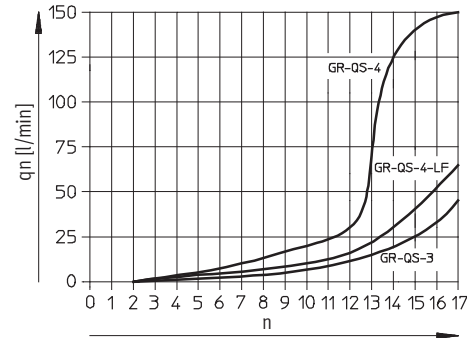
Standard nominal flow rate q_{nN} at 6 \rightarrow 5 bar
as a function of turns of the adjusting screw n

GR-QS-3/GR-QS-4

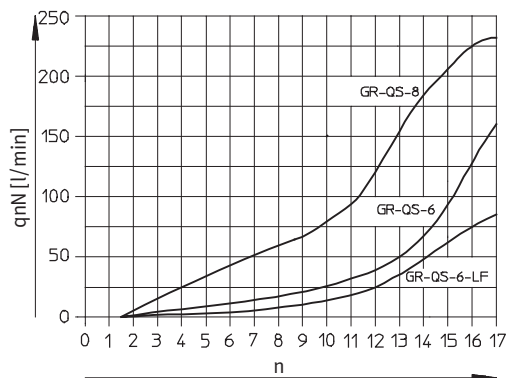


Standard flow rate q_n at 6 \rightarrow 0 bar
as a function of turns of the adjusting screw n

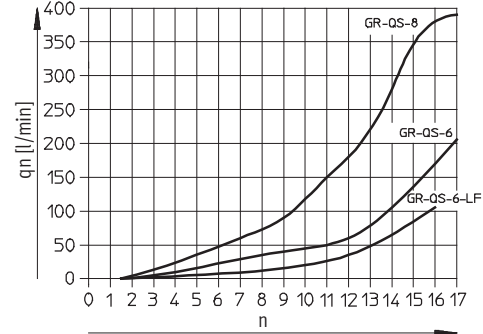
GR-QS-3/GR-QS-4



GR-QS-6/GR-QS-8

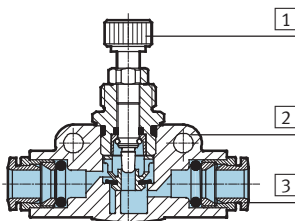


GR-QS-6/GR-QS-8



Materials

Sectional view



One-way flow control valve

1	Adjusting screw	Nickel-plated brass
2	Housing	PA, reinforced
3	Releasing ring	POM
–	Seals	NBR

One-way flow control valves GR, in-line installation

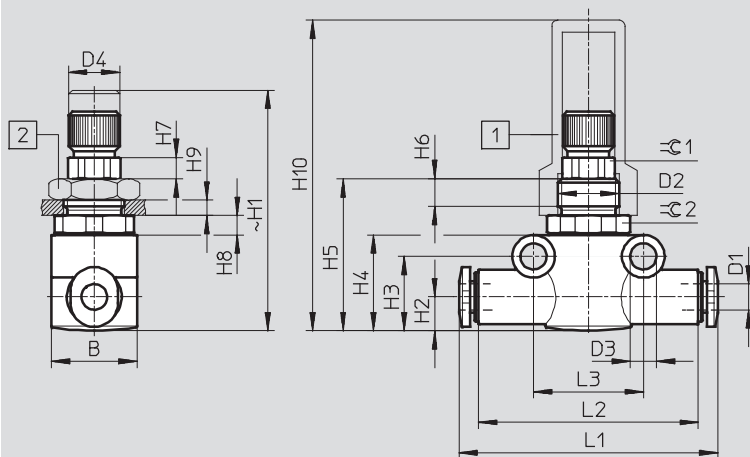
Technical data – Push-in connector QS, polymer

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Dimensions

Download CAD Data → www.festo.com/us/cad

Knurled screw




- 1 Cover cap GRK → 12
2 Hex nut GRM → 12

Type	Tubing O.D. D1	B	D2	D3 Ø	D4 Ø	H1		H2	H3	H4
						min.	max.			
GR-QS-3	3	14	M10x1	4.3 ±0.1	8.0 -0.3	35.9	40	5.55	12.2	15.7
GR-QS-4	4	14	M10x1	4.3 ±0.1	8.0 -0.3	35.9	40	5.55	12.2	15.7
GR-QS-6	6	16	M12x1	4.3 ±0.1	10.1 -0.3	40.4	44.5	8.4	17.3	21.3
GR-QS-8	8	16	M12x1	4.3 ±0.1	10.1 -0.3	40.4	44.5	8.4	17.3	21.3

Type	H5	H6	H7	H8	H9 max.	H10	L1	L2	L3	∠ 1	∠ 2
GR-QS-3	24.9	4.5	3.5	3.2	2.5	50.9	41.8	36	18	8	13
GR-QS-4	24.9			3.2	2.5	50.9	42.4	36	18		13
GR-QS-6	30.1			2.8	3.5	46.1	51.6	43	24		14
GR-QS-8	30.1			2.8	3.5	46.1	53.4	43	24		14

Ordering data – One-way flow control function

Pneumatic connection		Standard nominal flow rate q _N at 6 → 5 bar		Standard flow rate q _n at 6 → 0 bar		Weight [g]	Part No.	Type
		in direction of flow control	in non-return direction	in direction of flow control	in non-return direction			
		2	1	[l/min]	[l/min]			
Knurled screw								
	QS-3	QS-3	25	65 ... 70	100	125 ... 135	15	193965 GR-QS-3
	QS-4	QS-4	40	100 ... 110	130	170 ... 185	15	193966 GR-QS-4-LF
			85	100 ... 110	150	170 ... 185	15	193967 GR-QS-4
	QS-6	QS-6	75	260 ... 270	110	500 ... 510	25	193968 GR-QS-6-LF
			160	260 ... 270	205	500 ... 510	25	193969 GR-QS-6
	QS-8	QS-8	225	350 ... 400	390	610 ... 640	26	193970 GR-QS-8

One-way flow control valves GR, in-line installation

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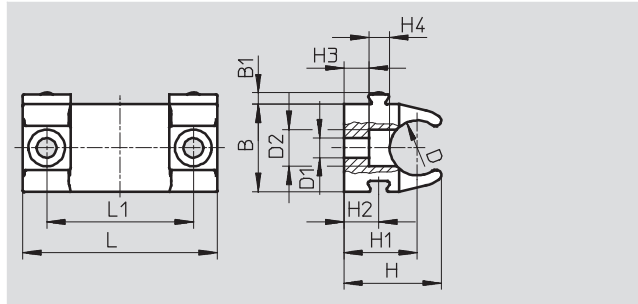
Accessories

Retainer GR-H

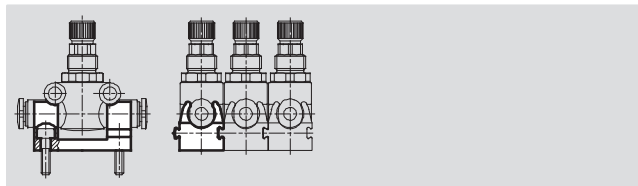
For mounting on a flat surface via M3 screws. The one-way flow control valve is snapped into the retainer. The retainer can be fitted in any position.

Material: POM

Free of copper and PTFE



Linking of multiple retainers via dovetail slot



Dimensions and ordering data								
For type	B	B1	D	D1	D2	H	H1	H2
GR-QS-3, GR-QS-4	14.3	1.9	9	3.2	6	16	12	5.7
GR-QS-6, GR-QS-8	19.8	1.9	14.5	3.2	6	19.2	13	5.7

For type	H3	H4	L	L1	Weight [g]	Part No.	Type
GR-QS-3, GR-QS-4	4.1	3.4	31.8	24	4	195495	GR-H-QS-3-4
GR-QS-6, GR-QS-8	2.3	3.4	31.8	24	5	195496	GR-H-QS-6-8

Hex nut GRM

For front panel mounting

Material: Steel



Ordering data			
For type	Description	Part No.	Type
GR-QS-3, GR-QS-4	Thread M10x1	6444	GRM-M5
GR-QS-6, GR-QS-8	Thread M12x1	2107	GRM-1/8

Cover cap GRK

Material: PP



Ordering data			
For type	Description	Part No.	Type
GR-QS-3, GR-QS-4	Thread M10x1	6436	GRK-M5
GR-QS-6, GR-QS-8	Thread M12x1	2105	GRK-1/8

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