
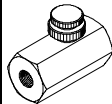



Flow control valves GRO, in-line installation



Flow control valves GRO, in-line installation

Product range overview and type codes

Product range overview									
Version	Valve function	Version	Type	Connection direction	Pneumatic connection 2	Pneumatic connection 1	qnN ¹⁾ [l/min]	Adjustment component	→ Page/Internet
In-line installation	Metal								
	Flow control function		GRO	Inline	M5, G1/8	M5, G1/8	87 ... 194	Knurled screw	3
	Flow control function		GRO	Inline	G1/4	G1/4	350	Knurled screw	3
In-line installation	Polymer								
	Flow control function		GRO	Inline	QS-3, QS-4, QS-6	QS-3, QS-4, QS-6	25 ... 160	Knurled screw	6

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

Type codes

		GRO	-	QS-4	-	
Type						
GRO	Flow control valve, in-line installation					
Pneumatic connection 1 and 2						
M5	Female thread M5					
1/8	Female thread G1/8					
1/4	Female thread G1/4					
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					
Generation						
B	B series					

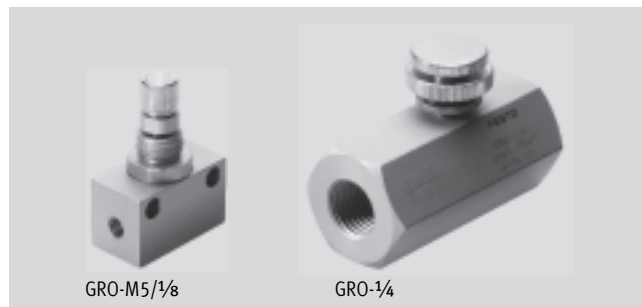
Flow control valves GRO, in-line installation

Technical data – Female thread, metal

Function



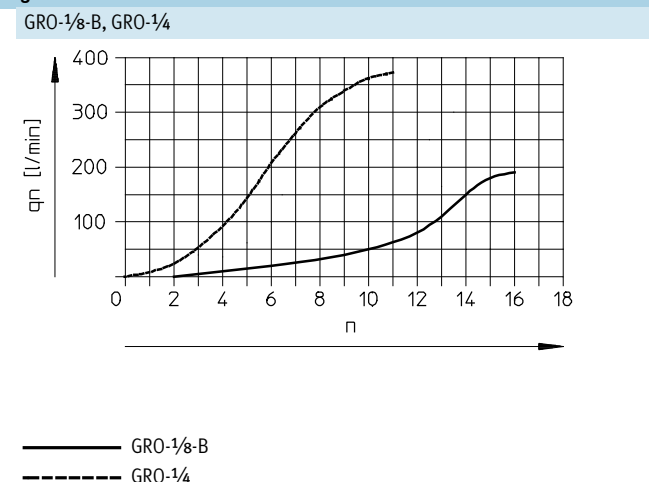
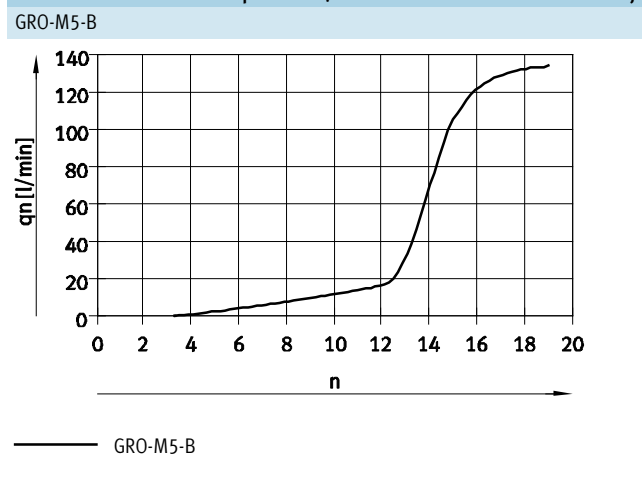
- - Flow rate
87 ... 350 l/min
- - Temperature range
-20 ... +60 °C
- - Operating pressure
0 ... 10 bar



General technical data			
Valve function	Flow control function		
Pneumatic connection 1	M5	G1/8	G1/4
Pneumatic connection 2	M5	G1/8	G1/4
Adjustment component	Knurled screw		
Type of mounting	Front panel mounting		Inline installation
	Via through-hole		-
Mounting position	Any		

Operating and environmental conditions			
Pneumatic connection 1	M5	G1/8	G1/4
Operating pressure [bar]	0 ... 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]	-20 ... +60		
Temperature of medium [°C]	-20 ... +60		
Storage temperature [°C]	-20 ... +40	-20 ... +60	

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



Materials

Sectional view

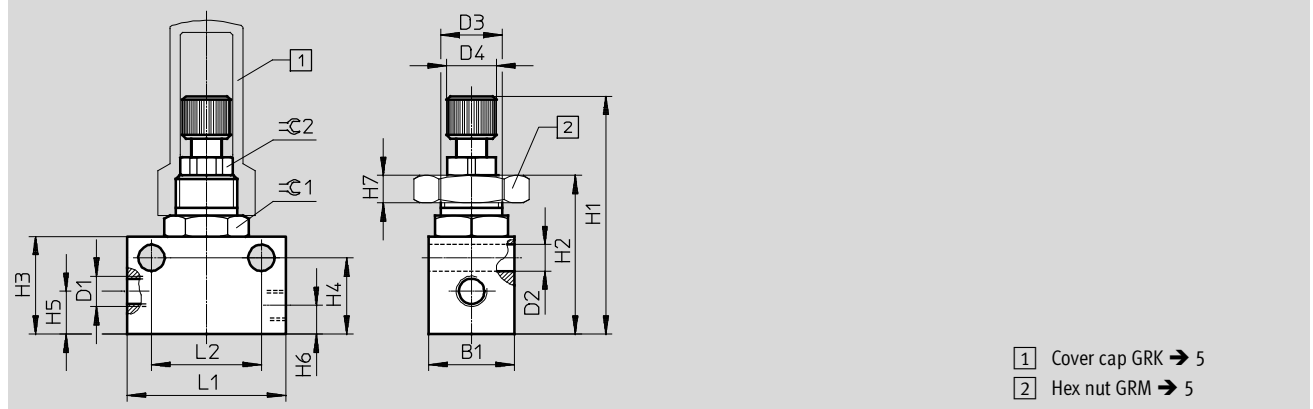
Flow control valve	
1 Adjusting screw	GRO-M5-B, GRO-1/8-B: Brass GRO-1/4: Galvanised steel
2 Housing	Wrought aluminium alloy
- Seals	NBR
Note on materials	RoHS-compliant

Flow control valves GRO, in-line installation

Technical data – Female thread, metal

Dimensions Download CAD data → www.festo.com

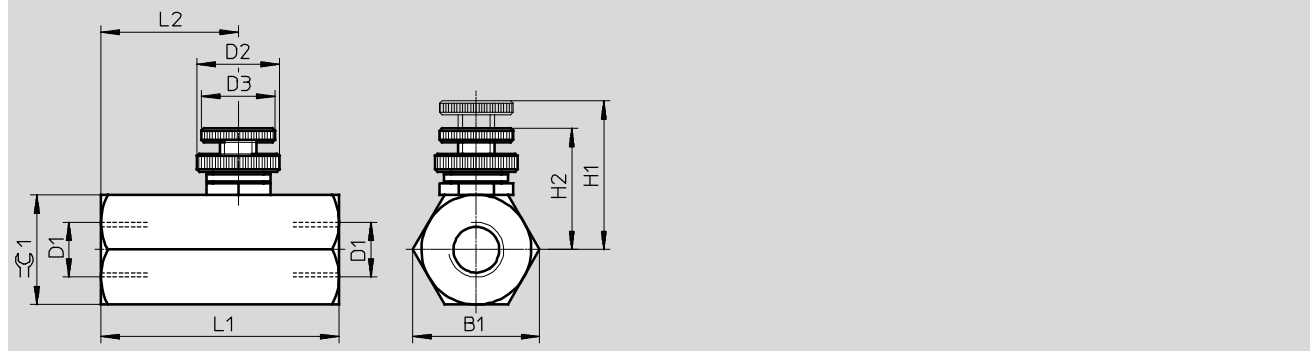
GRO-M5-B/GRO-1/8-B



Type	Connection D1	B1	D2 Ø	H1		H2	H3	H4	H5	H6	H7 max.	L1	L2	⌀ 1	⌀ 2
				min.	max.										
GRO-M5-B	M5	14	4.3	36.2	40.3	25.2	16	12.5	7	4.7	2.5	26	18 ±0.1	13	8
GRO-1/8-B	G1/8	16	4.3	41.1	45.2	30.8	22	17.5	9.2	9	3.5	32	24 ±0.1	14	8

Dimensions Download CAD data → www.festo.com

GRO-1/4



Type	Connection D1	B1	D2 Ø	D3 Ø	H1	H2	L1	L2	⌀ 1
GRO-1/4	G1/4	28	18	16	32.5	26.5	52	30	24

Ordering data

	Pneumatic connection 1	Pneumatic connection 2	Standard nominal flow rate q _{nN} at 6 → 5 bar in direction of flow control [l/min]	Weight [g]	Part No.	Type
Knurled screw						
	M5	M5	87	21	151214	GRO-M5-B
	G1/8	G1/8	194	34	151216	GRO-1/8-B
	G1/4	G1/4	350	80	2109	GRO-1/4

Flow control valves GRO, in-line installation

Accessories

Hex nut GRM

For front panel mounting

Material: Steel



Ordering data			
For type	Description	Part No.	Type
GRO-M5-B	Thread M10x1	6444	GRM-M5
GRO-1/8-B	Thread M12x1	2107	GRM-1/8

Cover cap GRK

Material: PP

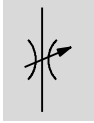





Ordering data			
For type	Description	Part No.	Type
GRO-M5-B	Thread M10x1	6436	GRK-M5
GRO-1/8-B	Thread M12x1	2105	GRK-1/8

Flow control valves GRO, in-line installation

Technical data – Push-in connector QS, polymer

Function



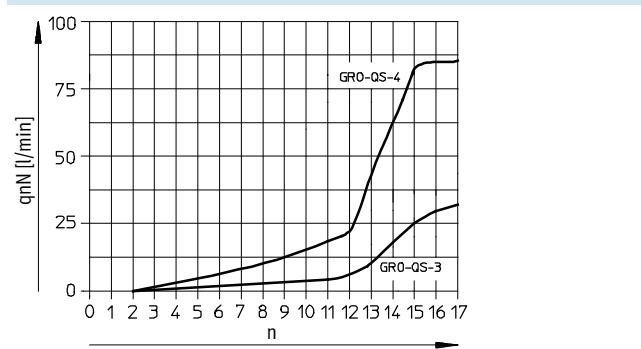
-  - Flow rate
25 ... 160 l/min
-  - Temperature range
-10 ... +60 °C
-  - Operating pressure
0 ... 10 bar



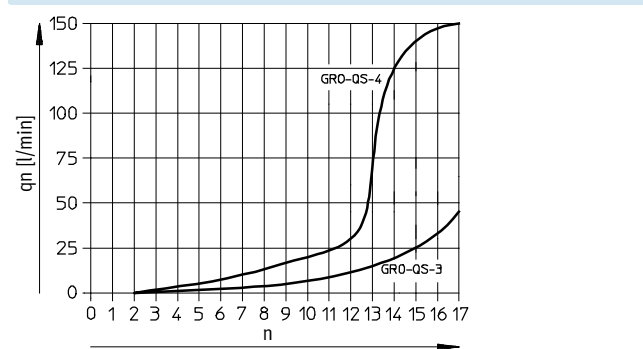
General technical data			
Valve function	Flow control function		
Pneumatic connection 1	QS-3	QS-4	QS-6
Pneumatic connection 2	QS-3	QS-4	QS-6
Adjustment component	Knurled screw		
Type of mounting	Via through-hole		
	Front panel mounting		
	Via accessories		
Mounting position	Any		

Operating and environmental conditions	
Operating pressure [bar]	0 ... 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

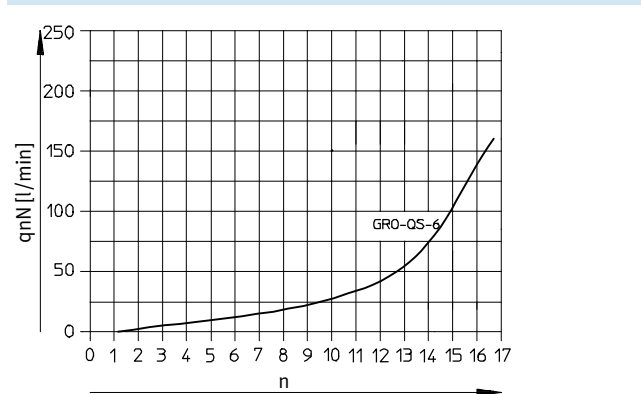
Standard nominal flow rate q_{nN} at 6 → 5 bar as a function of turns of the adjusting screw n
GRO-QS-3/GRO-QS-4



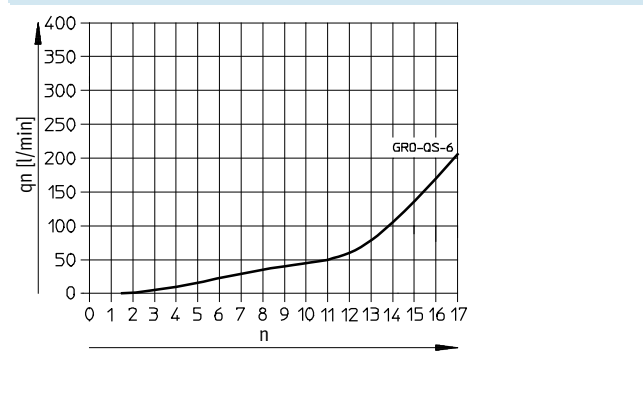
Standard flow rate q_n at 6 → 0 bar as a function of turns of the adjusting screw n
GRO-QS-3/GRO-QS-4



GRO-QS-6



GRO-QS-6

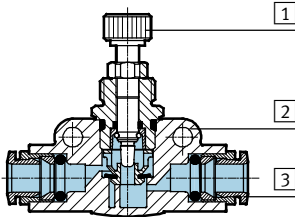


Flow control valves GRO, in-line installation

Technical data – Push-in connector QS, polymer

Materials

Sectional view



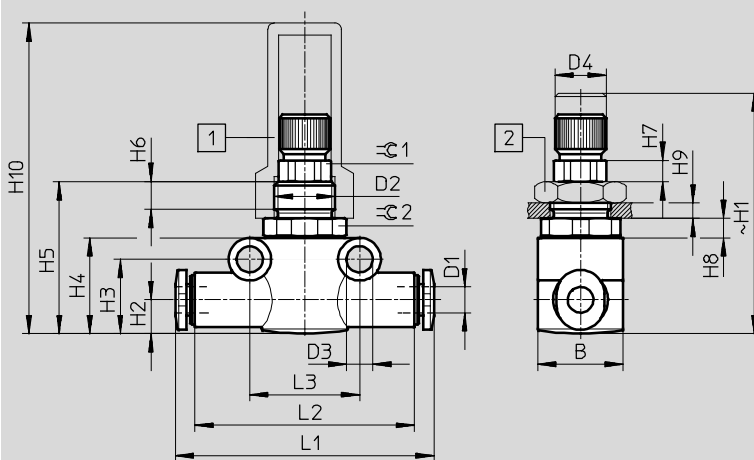
Flow control valve

1	Adjusting screw	Nickel-plated brass
2	Housing	PA, reinforced
3	Releasing ring	POM
-	Seals	NBR
Note on materials		RoHS-compliant

Dimensions

Download CAD data → www.festo.com

Knurled screw



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

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

Ordering data

	Pneumatic connection 1	Pneumatic connection 2	Standard nominal flow rate qnN at 6 → 5 bar in direction of flow control [l/min]	Weight [g]	Part No.	Type
Knurled screw						
	QS-3	QS-3	25	15	193971	GRO-QS-3
	QS-4	QS-4	85	15	193972	GRO-QS-4
	QS-6	QS-6	160	25	193973	GRO-QS-6

Flow control valves GRO, in-line installation

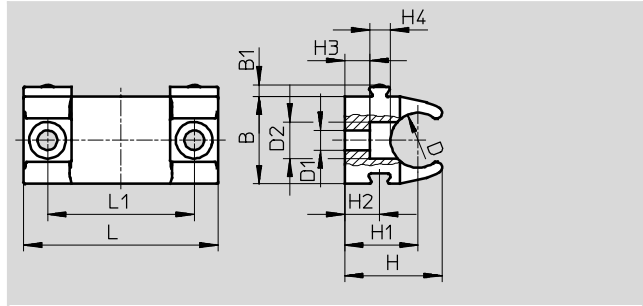
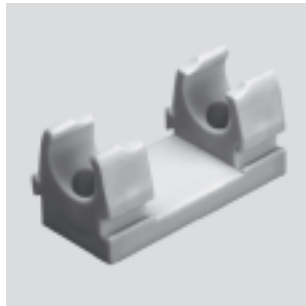
Accessories



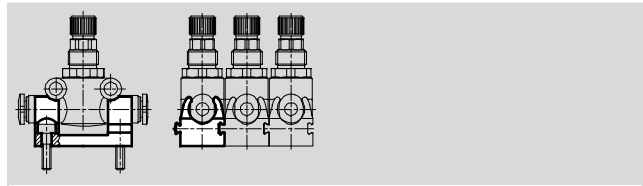
Retainer GR-H-QS

For mounting on a flat surface via M3 screws. The 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
GRO-QS-3, GRO-QS-4	14.3	1.9	9	3.2	6	16	12	5.7
GRO-QS-6	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
GRO-QS-3, GRO-QS-4	4.1	3.4	31.8	24	4	195495	GR-H-QS-3-4
GRO-QS-6	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
GRO-QS-3, GRO-QS-4	Thread M10x1	6444	GRM-M5
GRO-QS-6	Thread M12x1	2107	GRM-1/8

Cover cap GRK

Material: PP



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