

Exhaust air flow control valves

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Exhaust air flow control valves

Product range overview

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Function

Exhaust air flow control valves are screwed into the exhaust controls of control valves or drives. They enable the piston speed of cylinders or rotary drives to be controlled by restricting

the air exhaust. This is done using the adjusting element. The air is exhausted via an integrated silencer which reduces the noise level.

Design	Valve function	Design	Type	Pneumatic connection 1	qn ¹⁾ [l/min]	Adjusting element	→ Page/ Internet
Exhaust air flow control valve	Sintered metal						
	Flow control/ silencer function		GRE	G1/8, G1/4, G3/8, G1/2	0 ... 3,600	Slotted head screw	3
Flow control/ silencer	Plastic						
	Flow control/ silencer function		VFFK	M5, M7, R1/8, R1/4	0 ... 420	Knurled screw	5
			GRU	G1/8, G1/4, G3/8, G1/2, G3/4	0 ... 8,000	Slotted head screw	8

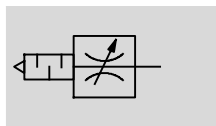
1) Standard flow rate

Exhaust air flow control valves GRE

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Technical data

Function



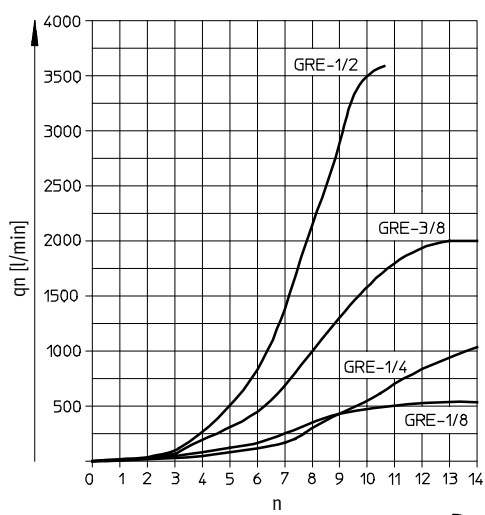
-  Flow rate
0 ... 3,600 l/min
-  Temperature range
-10 ... +70 °C
-  Operating pressure
0 ... 10 bar



General technical data				
Valve function	Flow control/silencer function			
Pneumatic connection 1	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$
Adjustment component	Slotted head screw			
Type of mounting	Screw-in			
Mounting position	Any			
Max. tightening torque [Nm]	–	–	15	–

Operating and environmental conditions				
Pneumatic connection 1	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$
Operating pressure [bar]	0 ... 10			
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:-:-]	Compressed air in accordance with ISO 8573-1:2010 [7:-:-]	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 ... +70			
Temperature of medium [°C]	-10 ... +70			

Standard nominal flow rate q_{nN} at 6 bar → 5 bar as a function of spindle rotations n



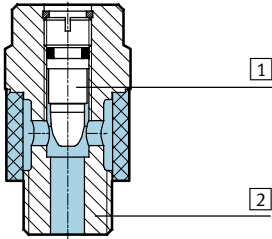
Exhaust air flow control valves GRE

Technical data

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Materials

Sectional view

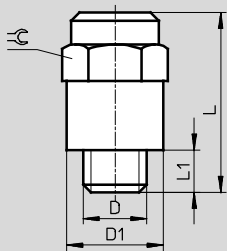


Exhaust air flow control valve

1	Adjusting screw	Brass
2	Threaded plug	Wrought aluminium alloy
–	Seals	NBR
Note on materials		RoHS-compliant

Dimensions

Download CAD data → www.festo.com



Type	Connection D	D1 Ø	L	L1	≙
GRE-1/8	G1/8	15	28.5	6.5	14
GRE-1/4	G1/4	18.2	34	8	17
GRE-3/8	G3/8	25	42	8	22
GRE-1/2	G1/2	27	48	12	24

Ordering data

	Pneumatic connection 1	Standard nominal flow rate qnN at 6 bar → 5 bar in direction of flow control [l/min]	Standard flow rate qn at 6 bar → 0 bar in direction of flow control [l/min]	Weight [g]	Part No.	Type
	G1/8	520	0 ... 520	15	10351	GRE-1/8
	G1/4	996	0 ... 996	25	10352	GRE-1/4
	G3/8	2,000	3 ... 2,000	50	35310	GRE-3/8
	G1/2	3,600	0 ... 3,600	75	10353	GRE-1/2

Flow control/silencers VFFK

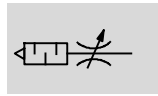
Type codes

		VFFK	-	C	-	K	-	M7	-	P
Type										
VFFK	Flow control/silencer									
Design										
C	Inline									
Adjusting element										
K	Knurled screw									
Pneumatic connection 1										
M5	Thread M5									
M7	Thread M7									
R18	Thread R1/8									
R14	Thread R1/4									
Additional feature										
P	Polymer silencer									

Flow control/silencers VFFK

Technical data

Function



-  Flow rate
0 ... 420 l/min
-  Temperature range
0 ... +60 °C
-  Operating pressure
0 ... 10 bar



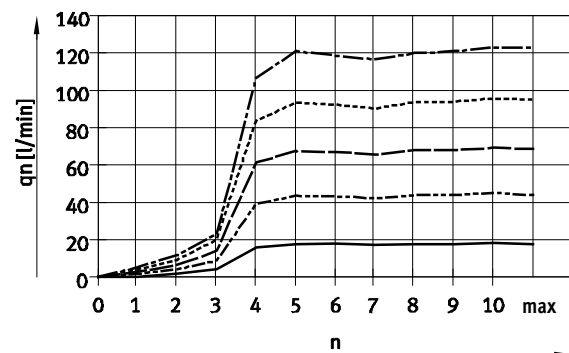
General technical data				
Valve function	Flow control/silencer function			
Pneumatic connection 1	M5	M7	R1/8	R1/4
Adjusting element	Knurled screw			
Type of mounting	Screw-in			
Mounting position	Any			
Type of seal on threaded plug	Sealing ring			Coating
Nominal tightening torque [Nm]	1.4 ±20%	3.8 ±20%	–	

Operating and environmental conditions	
Operating pressure [bar]	0 ... 10
Operating medium	Compressed air according to ISO 8573-1:2010 [7:4:4]
Note about the operating/pilot medium	Lubricated operation possible
Ambient temperature [°C]	0 ... +60
Temperature of medium [°C]	0 ... +60
Storage temperature [°C]	0 ... +60

Materials		
Type	VFFK-C-K-M...-P	VFFK-C-K-R...-P
Silencer insert	PE	
Threaded plug	Nickel-plated brass	
Regulating screw	Nickel-plated brass	
Knurled nut	Aluminium	
Seals	NBR	–
Note on materials	RoHS-compliant	

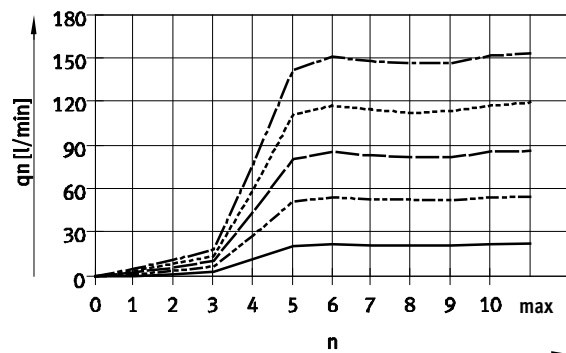
Standard flow rate q_n [l/min] as a function of turns of the adjusting screw n

VFFK-C-K-M5-P



— P1 = 1 bar
 - - - P1 = 3 bar
 - · - P1 = 5 bar
 - - - - P1 = 7 bar
 — · — P1 = 9 bar

VFFK-C-K-M7-P



Flow rate tolerance: ±20%

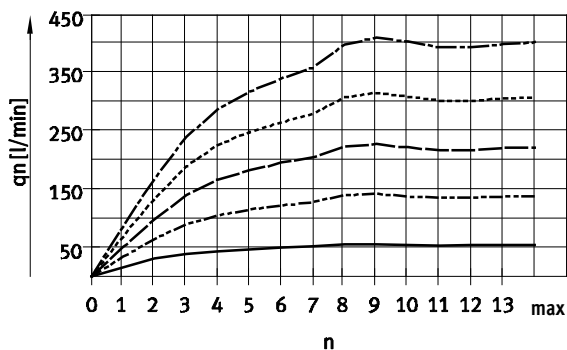
Flow control/silencers VFFK

Technical data

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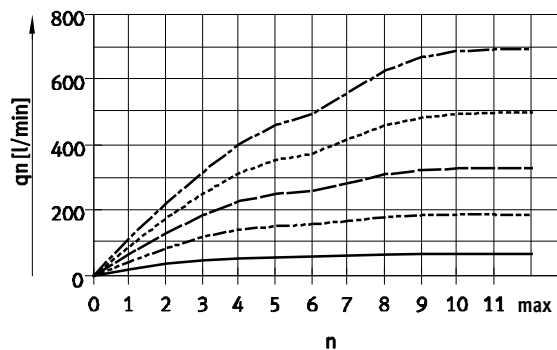
Standard flow rate q_n [l/min] as a function of turns of the adjusting screw n

VFFK-C-K-R18-P



— P1 = 1 bar
 - - - P1 = 3 bar
 - · - P1 = 5 bar
 · · · P1 = 7 bar
 · · · P1 = 9 bar

VFFK-C-K-R14-P

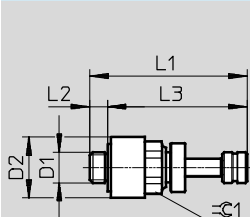


Flow rate tolerance: $\pm 20\%$

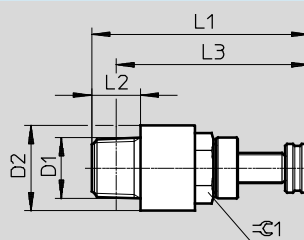
Dimensions

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VFFK-C-K-M...-P

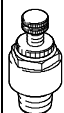


VFFK-C-K-R...-P



Type	Connection D1	D2 Ø	L1		L2	L3		1/8
			min.	max.		min.	max.	
VFFK-C-K-M5-P	M5x0.8	10	22.2	25.8	2.9	19.3	22.9	8
VFFK-C-K-M7-P	M7x1	10	25	28.3	5.5	19.2	22.8	8
VFFK-C-K-R18-P	R1/8	14	29.1	35.8	8	25.1	31.8	10
VFFK-C-K-R14-P	R1/4	18	31.1	37	10.8	25.1	31	14

Ordering data

	Pneumatic connection 1	Standard flow rate q_n at 6 bar → 0 bar [l/min]	Weight [g]	Part No.	Type
	M5	0 ... 80	4.5	133140	VFFK-C-K-M5-P
	M7	0 ... 100	6.1	133141	VFFK-C-K-M7-P
	R1/8	0 ... 270	13.5	133142	VFFK-C-K-R18-P
	R1/4	0 ... 420	25	133143	VFFK-C-K-R14-P

Flow control/silencers GRU

Type codes

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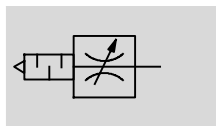
		GRU	-	1/4	-	B
Type						
GRU	Flow control/silencer					
Pneumatic connection 1						
1/8	Thread G1/8					
1/4	Thread G1/4					
3/8	Thread G3/8					
1/2	Thread G1/2					
3/4	Thread G3/4					
Generation						
B	B series					

Flow control/silencers GRU

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Technical data

Function



- - Flow rate
0 ... 8,000 l/min
- - Temperature range
-10 ... +70 °C
- - Operating pressure
0 ... 10 bar



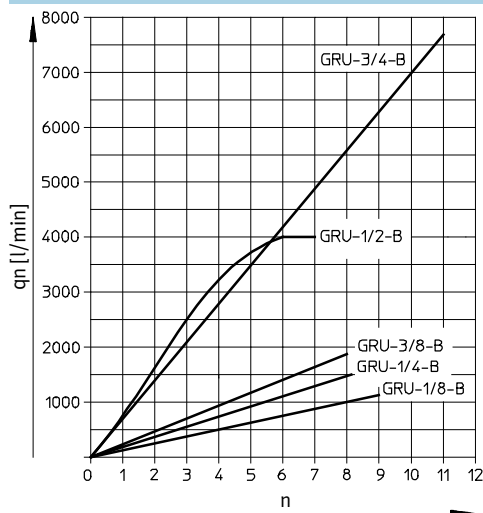
General technical data

Valve function	Flow control/silencer function				
Pneumatic connection 1	G1/8	G1/4	G3/8	G1/2	G3/4
Adjustment component	Slotted head screw				
Type of mounting	Screw-in				
Mounting position	Any				

Operating and environmental conditions

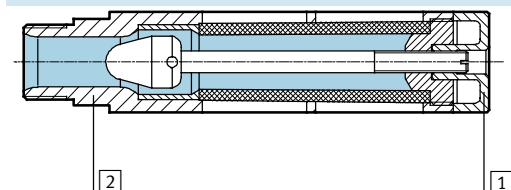
Operating pressure [bar]	0 ... 10
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:-:-]
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)
Ambient temperature [°C]	-10 ... +70
Temperature of medium [°C]	-10 ... +70

Standard nominal flow rate q_{nN} at 6 bar → 5 bar as a function of spindle rotations n



Materials

Sectional view



Flow control/silencer

1	Adjusting screw	PA
2	Housing, threaded plug	Die-cast aluminium
Note on materials		RoHS-compliant (GRU-3/8/GRU-3/4 only)

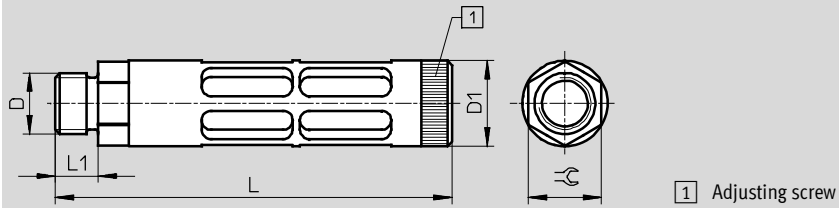
Flow control/silencers GRU

Technical data

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Dimensions

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Type	Connection D	D1 Ø	L	L1	⌀
GRU-1/8	G1/8	16	46	5.4	14
GRU-1/4	G1/4	19.5	63.3	6.4	17
GRU-3/8	G3/8	25	95.3	7.5	19
GRU-1/2	G1/2	28	130	14	24
GRU-3/4	G3/4	38	157	16	32

Ordering data

	Pneumatic con- nection 1	Standard nominal flow rate qnN at 6 bar → 5 bar in direction of flow control [l/min]	Standard flow rate qn at 6 bar → 0 bar in direction of flow control [l/min]	Weight [g]	Part No.	Type
	G1/8	1,000	0 ... 1,000	10	9516	GRU-1/8-B
	G1/4	1,500	0 ... 1,500	25	9517	GRU-1/4-B
	G3/8	1,700	0 ... 1,700	55	9518	GRU-3/8-B
	G1/2	4,000	0 ... 4,000	100	9519	GRU-1/2-B
	G3/4	8,000	0 ... 8,000	170	9520	GRU-3/4-B