

Exhaust air flow control valves






Exhaust air flow control valves

Product range overview

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.

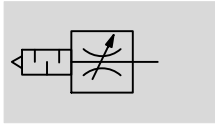
Design	Valve function	Design	Type	Pneumatic connection 1	qn ¹⁾ [l/min]	Adjusting element	→ Page/ Internet
Exhaust air flow control valve	Sintered metal						
	Flow control/silencer function		GRE	G1/8, G1/4, G3/8, G1/2, NPT1/8-27, NPT1/4-18, NPT3/8-18, NPT1/2-14	0 ... 3,600	Slotted head screw	3
Flow control/silencer	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

Technical data

Function



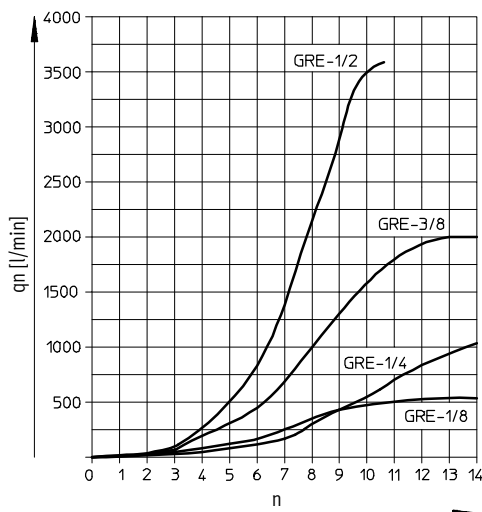
-  - Flow rate
0 ... 3,600 l/min
-  - Temperature range
-10 ... +70 °C
-  - Operating pressure
0 ... 10 bar



General technical data				
Valve function		Flow control/silencer function		
Pneumatic connection 1		G1/8 or NPT1/8-27	G1/4 or NPT1/4-18	G3/8 or NPT3/8-18
Adjustment component		Slotted head screw		
Type of mounting		Screw-in		
Mounting position		Any		
Nominal tightening torque	[Nm / ft-lbf]	12 ±20 / 8.85 ±20	-	-
Max. tightening torque	[Nm / ft-lbf]	-	-	15 / 11.1

Operating and environmental conditions				
Pneumatic connection 1		G1/8 or NPT1/8-27	G1/4 or NPT1/4-18	G3/8 or NPT3/8-18
Operating pressure	[bar / psi]	0 ... 10 / 0 ... 145		
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]
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)		
Ambient temperature	[°C / °F]	-10 ... +70 / 14 ... 158		
Temperature of medium	[°C / °F]	-10 ... +70 / 14 ... 158		

Standard flow rate q_n at 6 bar \rightarrow 0 bar as a function of spindle rotations n

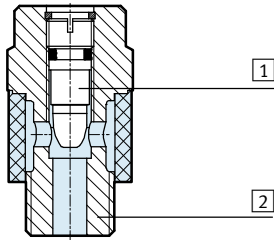


Exhaust air flow control valves GRE

Technical data

Materials

Sectional view

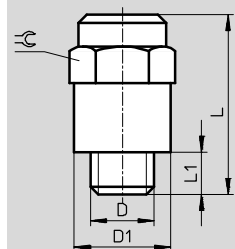


Exhaust air flow control valve

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

Dimensions

Download CAD data → www.festo.com



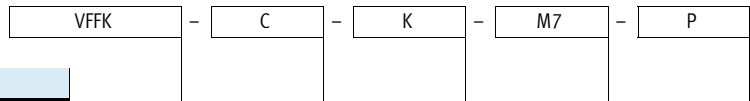
Type	Connection D	D1 ∅ [mm / in]	L [mm / in]	L1 [mm / in]	⌀
G thread					
GRE-1/8	G1/8	15 / 0.59	27.1 / 1.07	5.1 / 0.2	14
GRE-1/4	G1/4	18.2 / 0.72	32.1 / 1.26	6.1 / 0.24	17
GRE-3/8	G3/8	25 / 0.98	41.1 / 1.62	7.1 / 0.28	22
GRE-1/2	G1/2	27 / 1.06	44.6 / 1.76	8.6 / 0.34	24
NPT thread					
GRE-1/8-NPT	NPT1/8-27	15.3 / 0.6	34 / 1.34	10.7 / 0.42	9/16
GRE-1/4-NPT	NPT1/4-18	18.8 / 0.74	42 / 1.65	14.7 / 0.58	11/16
GRE-3/8-NPT	NPT3/8-18	25 / 0.98	50 / 1.97	14.6 / 0.57	7/8
GRE-1/2-NPT	NPT1/2-14	27 / 1.06	57 / 2.24	19.4 / 0.76	1 1/16

Ordering data

	Pneumatic connection 1	Standard nominal flow rate q _N at 6 bar → 5 bar in direction of flow control [l/min / cfm]	Standard flow rate q _n at 6 bar → 0 bar in direction of flow control [l/min / cfm]	Weight [g / lb]	Part No.	Type
	G thread					
	G1/8	520 / 18.4	0 ... 520 / 0 ... 18.4	15 / 0.03	10351	GRE-1/8
	G1/4	996 / 35.2	0 ... 996 / 0 ... 35.2	25 / 0.06	10352	GRE-1/4
	G3/8	2,000 / 70.6	3 ... 2,000 / 0.1 ... 70.6	50 / 0.11	35310	GRE-3/8
	G1/2	3,600 / 127.1	0 ... 3,600 / 0 ... 127.1	75 / 0.17	10353	GRE-1/2
	NPT thread					
	NPT1/8-27	520 / 18.4	0 ... 520 / 0 ... 18.4	15 / 0.03	10057	GRE-1/8-NPT
	NPT1/4-18	996 / 35.2	0 ... 996 / 0 ... 35.2	25 / 0.06	10058	GRE-1/4-NPT
	NPT3/8-18	2,000 / 70.6	3 ... 2,000 / 0.1 ... 70.6	50 / 0.11	35311	GRE-3/8-NPT
	NPT1/2-14	3,600 / 127.1	0 ... 3,600 / 0 ... 127.1	75 / 0.17	10059	GRE-1/2-NPT

Flow control/silencers VFFK

Type codes



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

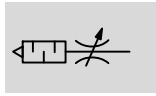
Additional feature	
P	Polymer silencer

Flow control/silencers VFFK

Technical data



Function



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

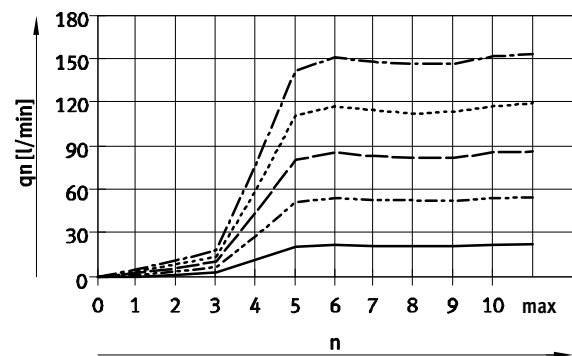
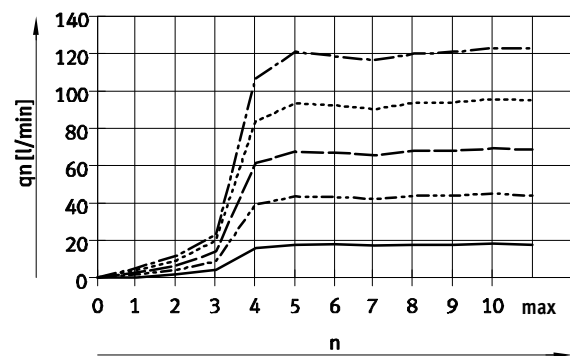


General technical data				
Valve function	Flow control/silencer function			
Pneumatic connection 1	M5	M7	R1/8	R1/4
Adjusting element	Knurled screw			
Type of mounting	Screw-in			
Mounting position	Any			
Type of seal on threaded plug	Sealing ring			Coating
Nominal tightening torque [Nm]	1.4 ±20%	3.8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

Operating and environmental conditions	
Operating pressure complete [bar]	0 ... 10
temperature range	
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 VFFK-C-K-M7-P



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

Flow rate tolerance: ±20%

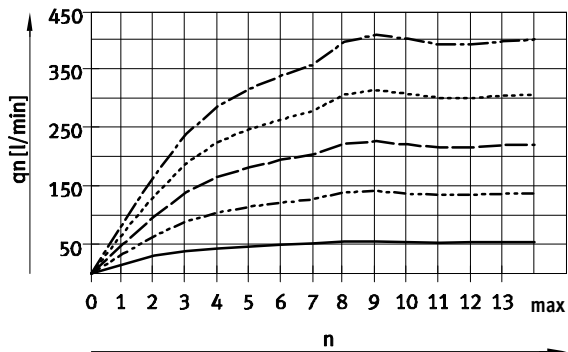
Flow control/silencers VFFK

Technical data

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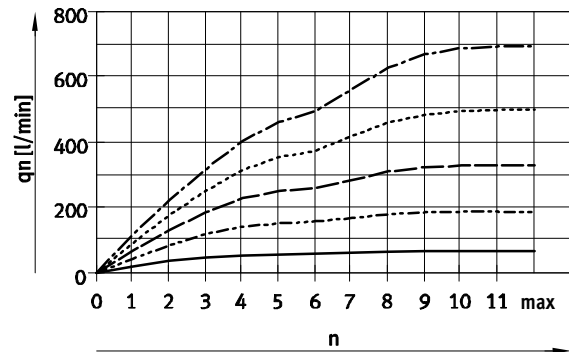
Standard flow rate q_n [l/min] as a function of turns of the adjusting screw n

VFFK-C-K-R18-P



— $P_1 = 1$ bar
 - - - $P_1 = 3$ bar
 - · - $P_1 = 5$ bar
 · · · $P_1 = 7$ bar
 - - - $P_1 = 9$ bar

VFFK-C-K-R14-P



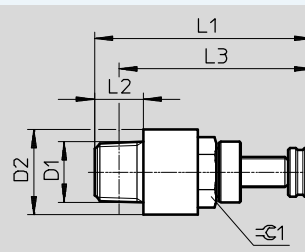
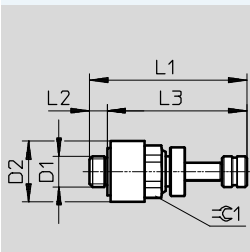
Flow rate tolerance: $\pm 20\%$

Dimensions

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

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



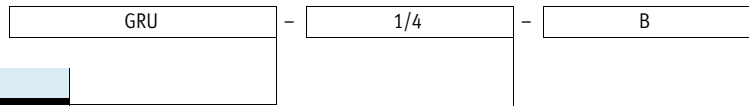
Type	Connection D1	D2 ∅	L1		L2	L3		≈ 1
			min.	max.		min.	max.	
VFFK-C-K-M5-P	M5x0.8	10	20.6	23.4	3	17.6	20.4	8
VFFK-C-K-M7-P	M7x1	10	24.1	26.9	5.5	18.6	21.4	8
VFFK-C-K-R18-P	R $\frac{1}{8}$	14	29.1	35.8	8	25.1	31.8	10
VFFK-C-K-R14-P	R $\frac{1}{4}$	18	31.1	37	10.8	25.1	31	14

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
	R $\frac{1}{8}$	0 ... 270	13.5	133142	VFFK-C-K-R18-P
	R $\frac{1}{4}$	0 ... 420	25	133143	VFFK-C-K-R14-P

Flow control/silencers GRU

Type codes



Type	
GRU	Flow control/silencer

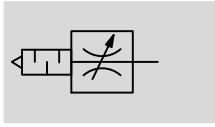
Pneumatic connection 1	
1/8	Thread G1/8
1/4	Thread G1/4
3/8	Thread G3/8
1/2	Thread G1/2
3/4	Thread G3/4

Generation	
B	B series

Flow control/silencers GRU

Technical data

Function



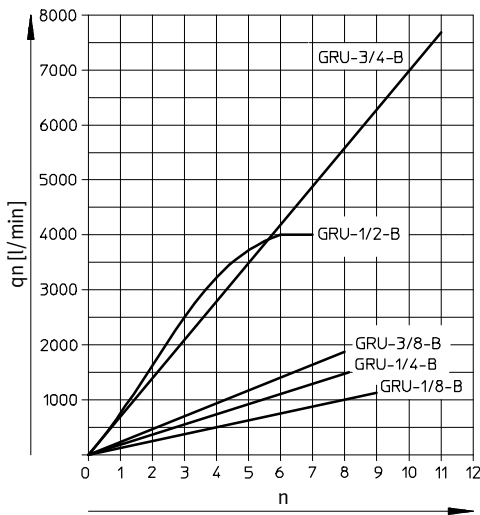
- - Flow rate
0 ... 8,000 l/min
- - Temperature range
-10 ... +70 °C
- - Operating pressure
0 ... 10 bar



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

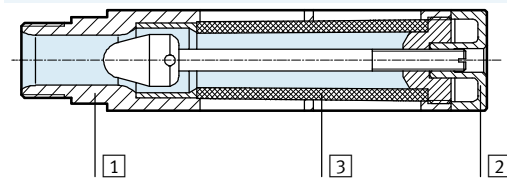
Operating and environmental conditions	
Operating pressure [bar]	0 ... 10
complete temperature range	
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:-:-]
Note on operating/pilot medium	Operation with lubricated medium possible
Ambient temperature [°C]	-10 ... +70
Temperature of medium [°C]	-10 ... +70

Standard flow rate q_n at 6 bar \rightarrow 0 bar as a function of spindle rotations n



Materials

Sectional view

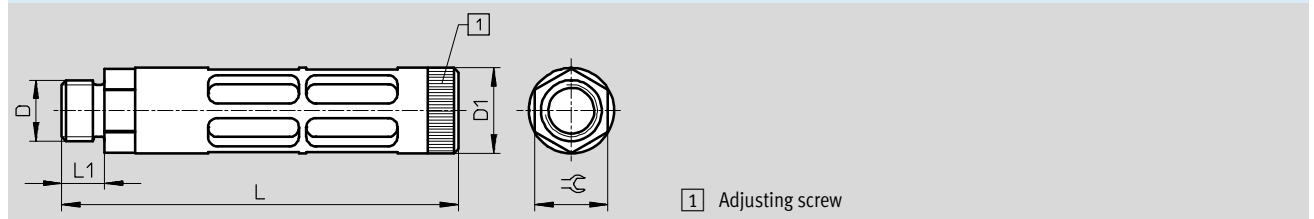


Flow control/silencer		
1	Housing, threaded plug	Aluminium
2	Adjusting screw	PA
3	Silencer insert	PE
Note on materials		RoHS-compliant

Flow control/silencers GRU

Technical data

Dimensions Download CAD data → www.festo.com



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