Exhaust air flow control valves

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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.

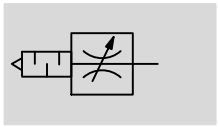
Design	Valve function	Design	Type	Pneumatic connection 1	qn[1)] [l/min]	Adjusting element	➔ Page/ Internet
Exhaust air flow control valve	Sintered metal						
	Flow control/ silencer function		GRE	G⅛, G¼, G⅜, G½	0 ... 3,600	Slotted head screw	3
Flow control/ silencer	Plastic						
	Flow control/ silencer function		VFFK	M5, M7, R⅛, R¼	0 ... 420	Knurled screw	5
			GRU	G⅛, G¼, G⅜, G½, G¾	0 ... 8,000	Slotted head screw	8

1) Standard flow rate

Exhaust air flow control valves GRE

Technical data

Function

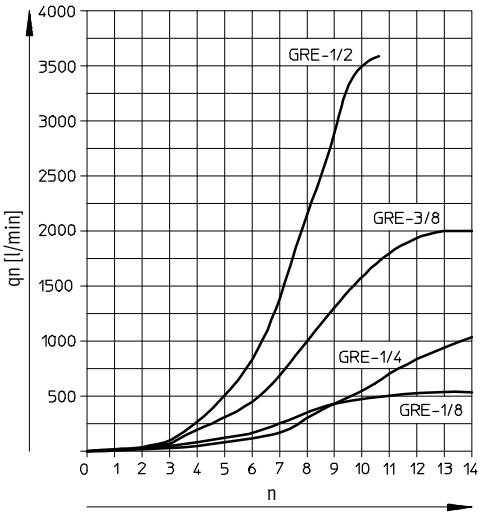


- Flow rate
  0 ... 3,600 l/min
- Temperature range
  –10 ... +70 °C
- Operating pressure
  0 ... 10 bar

General technical data					
Valve function		Flow control/silencer function			
Pneumatic connection 1		G⅛	G¼	G⅜	G½
Adjustment component		Slotted head screw			
Type of mounting		Screw-in			
Mounting position		Any			
Nominal tightening torque	[Nm]	12 ±20	–	–	–
Max. tightening torque	[Nm]	–	–	15	–

Operating and environmental conditions					
Pneumatic connection 1		G⅛	G¼	G⅜	G½
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 flow rate qn at 6 bar ⇢ 0 bar as a function of spindle rotations n



Exhaust air flow control valves GRE

Technical data

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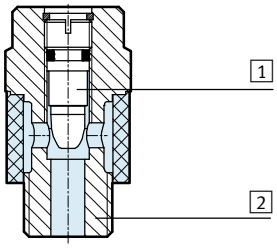
Materials

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

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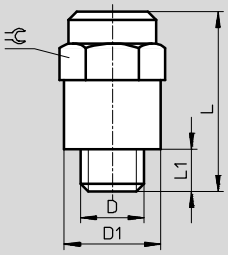

Type	Connection D	D1 ∅	L	L1	⫧
GRE-1/8	G1/8	15	27.1	5.1	14
GRE-1/4	G1/4	18.2	32.1	6.1	17
GRE-3/8	G3/8	25	41.1	7.1	22
GRE-1/2	G1/2	27	44.6	8.6	24

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

Type	
VFFK	Flow control/silencer

Design	
C	Inline

Adjusting element	
K	Knurled screw

Pneumatic connection 1	
M5	Thread M5
M7	Thread M7
R18	Thread R⅛
R14	Thread R¼

Additional feature	
P	Polymer silencer

Flow control/silencers VFFK

Technical data

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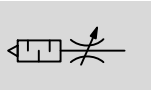
Function



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

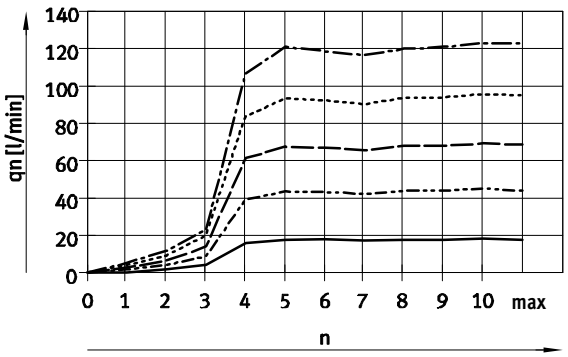
General technical data					
Valve function		Flow control/silencer function			
Pneumatic connection 1		M5	M7	R⅛	R¼
Adjusting element		Knurled screw			
Type of mounting		Screw-in			
Mounting position		Any			
Type of seal on threaded plug		Sealing ring		Coating	
Nominal tightening torque	[Nm]	1.4 ±20%	3.8 ±20%	–	

Operating and environmental conditions		
Operating pressure complete temperature range	[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

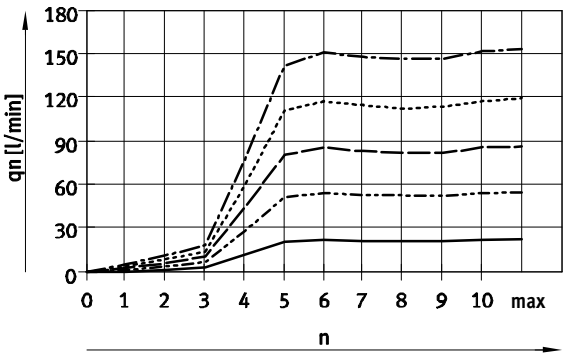
Materials		
Type	VFFK-C-K-M...-P	VFFK-C-K-R...-P
Silencer insert	PE	
Threaded plug	Nickel-plated brass	
Regulating screw	Nickel-plated brass	
Knurled nut	Aluminium	
Seals	NBR	–
Note on materials	RoHS-compliant	

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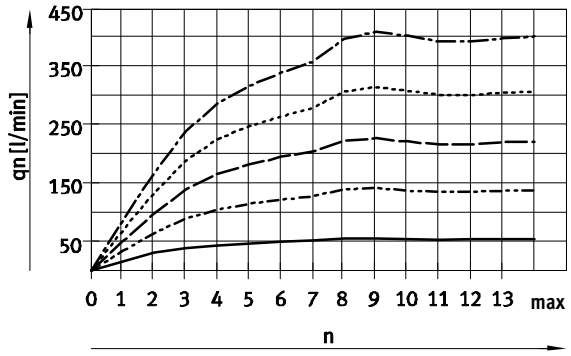
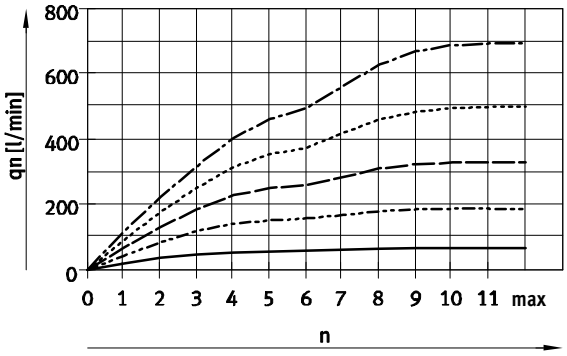
Standard flow rate qn [l/min] as a function of turns of the adjusting screw n

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: ±20%

Dimensions

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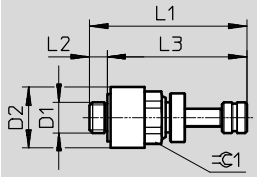
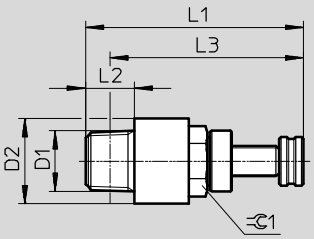
VFFK-C-K-M...-P

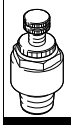


VFFK-C-K-R...-P



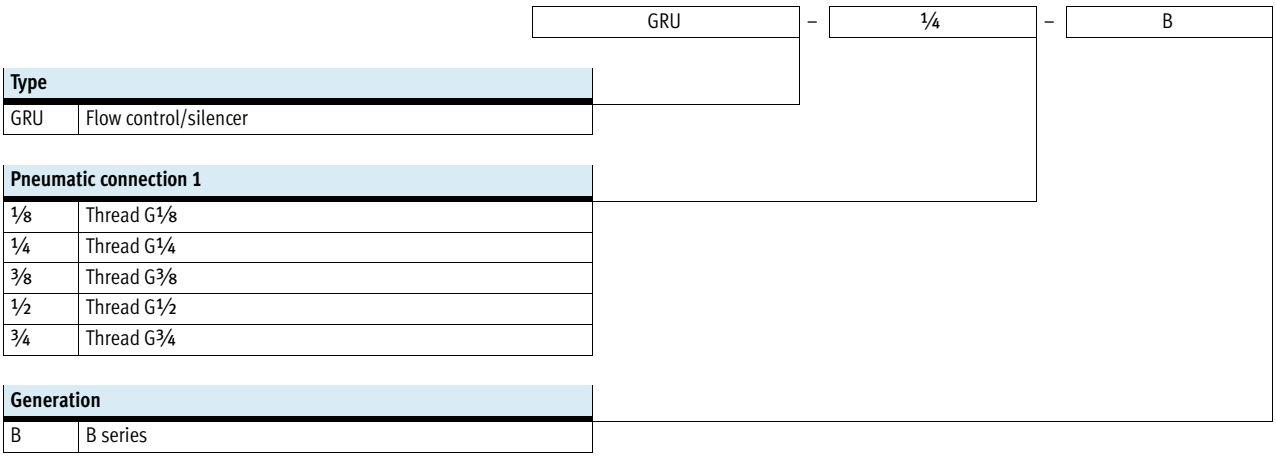
Type	Connection D1	D2 ∅	L1 min.	L1 max.	L2	L3 min.	L3 max.	⫧1
VFFK-C-K-M5-P	M5x0.8	10	20.6	23.4	3	17.6	20.4	8
VFFK-C-K-M7-P	M7x1	10	24.1	26.9	5.5	18.6	21.4	8
VFFK-C-K-R18-P	R⅛	14	29.1	35.8	8	25.1	31.8	10
VFFK-C-K-R14-P	R¼	18	31.1	37	10.8	25.1	31	14

Ordering data

	Pneumatic connection 1	Standard flow rate qn 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**
	R⅛	0 ... 270	13.5	**133142**	**VFFK-C-K-R18-P**
	R¼	0 ... 420	25	**133143**	**VFFK-C-K-R14-P**

Flow control/silencers GRU

Type codes



Type	
GRU	Flow control/silencer

Pneumatic connection 1	
⅛	Thread G⅛
¼	Thread G¼
⅜	Thread G⅜
½	Thread G½
¾	Thread G¾

Generation	
B	B series

Flow control/silencers GRU

Technical data

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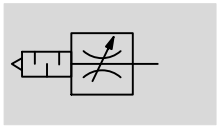
Function



Flow rate
0 ... 8,000 l/min

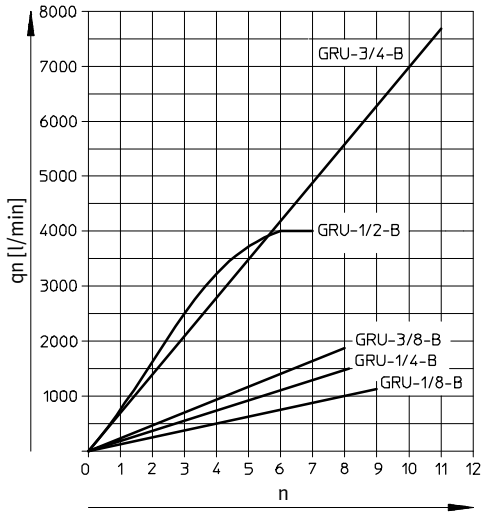
Temperature range
–10 ... +70 °C

Operating pressure
0 ... 10 bar

General technical data						
Valve function	Flow control/silencer function					
Pneumatic connection 1	G⅛	G¼	G⅜	G½	G¾	
Adjustment component	Slotted head screw					
Type of mounting	Screw-in					
Mounting position	Any					

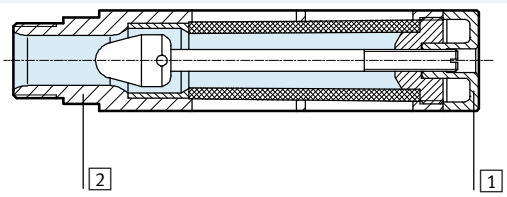
Operating and environmental conditions		
Operating pressure	[bar]	0 ... 10
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:–:–]
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)
Ambient temperature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

Standard flow rate qn at 6 bar ⇢ 0 bar as a function of spindle rotations n



Materials

Sectional view

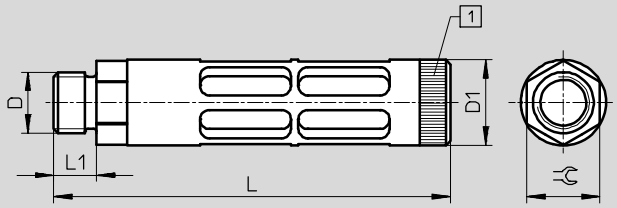


Flow control/silencer		
1	Adjusting screw	PA
2	Housing, threaded plug	Die-cast aluminium
Note on materials		RoHS-compliant (GRU-⅜/GRU-¾ only)

Flow control/silencers GRU

Technical data

Dimensions Download CAD data ➔ **www.festo.com**



1 Adjusting screw

Type	Connection D	D1 ∅	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 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	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**