

Exhaust air flow control valves



# Exhaust air flow control valves




Product range overview

FESTO

## 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.

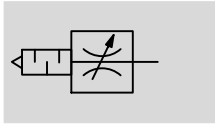
Design	Valve function	Design	Type	Pneumatic connection 1	qn <sup>1)</sup> [l/min]	Adjusting element	→ Page/ Internet
Exhaust air flow control valve	Sintered metal						
	Flow control/ silencer function		GRE	G1/8, G1/4, G3/8, G1/2, NPT1/8-27, NPT1/4-18, NPT3/8-18, NPT1/2-14	0 ... 3,600	Slotted head screw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



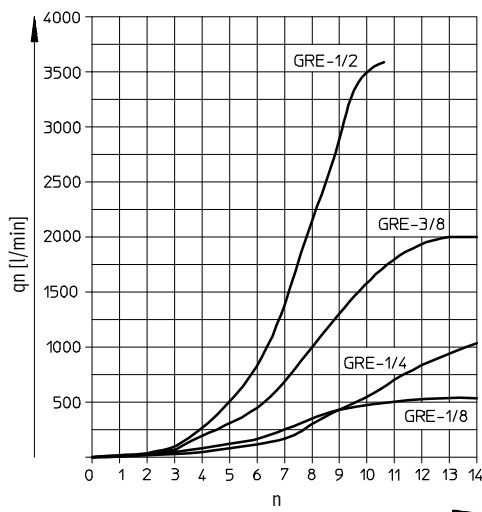
-  - Flow rate  
0 ... 3,600 l/min
-  - Temperature range  
-10 ... +70 °C
-  - Operating pressure  
0 ... 10 bar



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  $n$



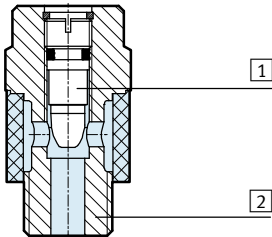
# Exhaust air flow control valves GRE

Technical data

FESTO

## Materials

Sectional view

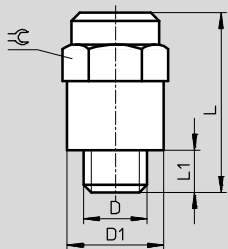


Exhaust air flow control valve

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

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



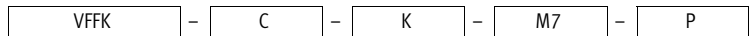
Type	Connection D	D1 ∅ [mm / in]	L [mm / in]	L1 [mm / in]	⌀
<b>G thread</b>					
GRE-1/8	G1/8	15 / 0.59	27.1 / 1.07	5.1 / 0.2	14
GRE-1/4	G1/4	18.2 / 0.72	32.1 / 1.26	6.1 / 0.24	17
GRE-3/8	G3/8	25 / 0.98	41.1 / 1.62	7.1 / 0.28	22
GRE-1/2	G1/2	27 / 1.06	44.6 / 1.76	8.6 / 0.34	24
<b>NPT thread</b>					
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 <sub>N</sub> at 6 bar → 5 bar in direction of flow control [l/min / cfm]	Standard flow rate q <sub>n</sub> at 6 bar → 0 bar in direction of flow control [l/min / cfm]	Weight [g / lb]	Part No.	Type
	<b>G thread</b>					
	G1/8	520 / 18.4	0 ... 520 / 0 ... 18.4	15 / 0.03	<b>10351</b>	<b>GRE-1/8</b>
	G1/4	996 / 35.2	0 ... 996 / 0 ... 35.2	25 / 0.06	<b>10352</b>	<b>GRE-1/4</b>
	G3/8	2,000 / 70.6	3 ... 2,000 / 0.1 ... 70.6	50 / 0.11	<b>35310</b>	<b>GRE-3/8</b>
	G1/2	3,600 / 127.1	0 ... 3,600 / 0 ... 127.1	75 / 0.17	<b>10353</b>	<b>GRE-1/2</b>
	<b>NPT thread</b>					
	NPT1/8-27	520 / 18.4	0 ... 520 / 0 ... 18.4	15 / 0.03	<b>10057</b>	<b>GRE-1/8-NPT</b>
	NPT1/4-18	996 / 35.2	0 ... 996 / 0 ... 35.2	25 / 0.06	<b>10058</b>	<b>GRE-1/4-NPT</b>
	NPT3/8-18	2,000 / 70.6	3 ... 2,000 / 0.1 ... 70.6	50 / 0.11	<b>35311</b>	<b>GRE-3/8-NPT</b>
	NPT1/2-14	3,600 / 127.1	0 ... 3,600 / 0 ... 127.1	75 / 0.17	<b>10059</b>	<b>GRE-1/2-NPT</b>

# 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

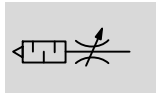
Additional feature	
P	Polymer silencer

# Flow control/silencers VFFK

Technical data

FESTO

Function



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

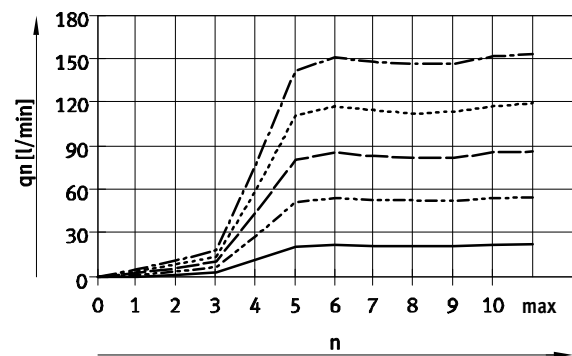
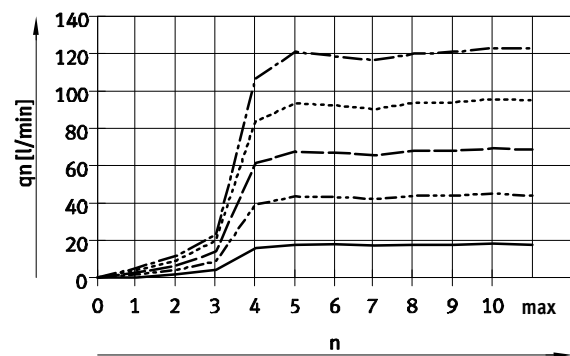


General technical data				
Valve function	Flow control/silencer function			
Pneumatic connection 1	M5	M7	R $\frac{1}{8}$	R $\frac{1}{4}$
Adjusting element	Knurled screw			
Type of mounting	Screw-in			
Mounting position	Any			
Type of seal on threaded plug	Sealing ring			Coating
Nominal tightening torque [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%

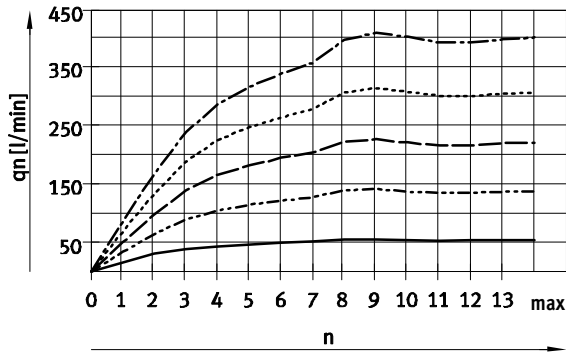
# Flow control/silencers VFFK

Technical data

FESTO

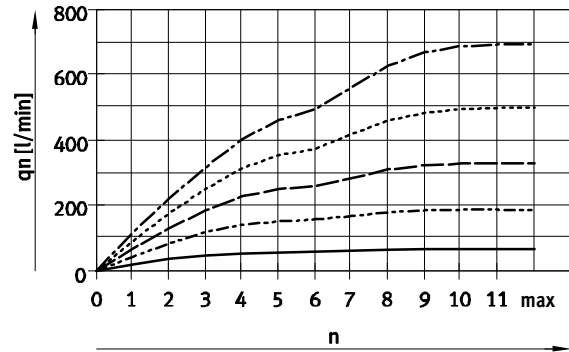
## Standard flow rate $q_n$ [l/min] as a function of turns of the adjusting screw $n$

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

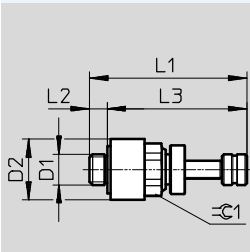


Flow rate tolerance:  $\pm 20\%$

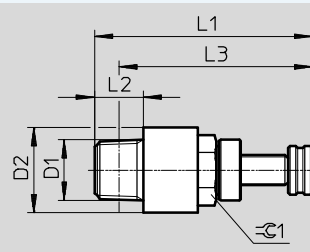
## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

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

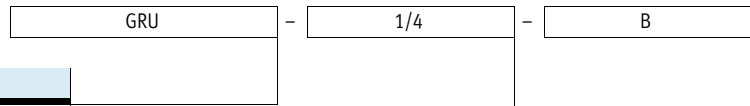
## Ordering data

	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

FESTO



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

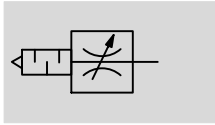
Generation	
B	B series



# Flow control/silencers GRU

Technical data

Function



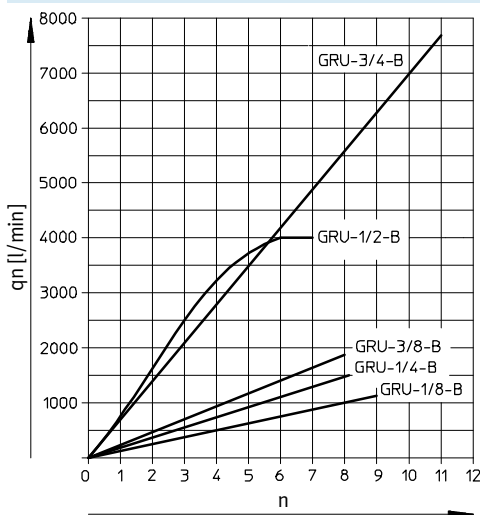
- - Flow rate  
0 ... 8,000 l/min
- - Temperature range  
-10 ... +70 °C
- - Operating pressure  
0 ... 10 bar



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				

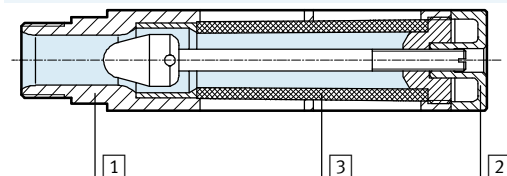
Operating and environmental conditions	
Operating pressure [bar]	0 ... 10
complete temperature range	
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:--:-]
Note on operating/pilot medium	Operation with lubricated medium possible
Ambient temperature [°C]	-10 ... +70
Temperature of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

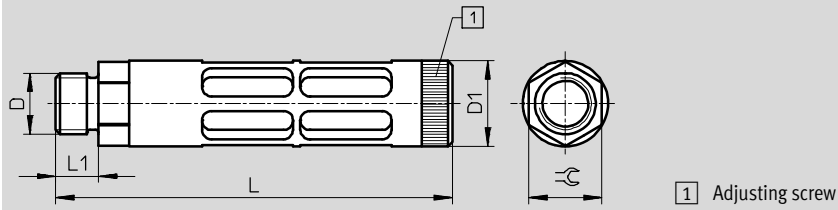
# Flow control/silencers GRU

Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



1 Adjusting screw

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	<b>9516</b>	<b>GRU-1/8-B</b>
	G1/4	0 ... 1,500	25	<b>9517</b>	<b>GRU-1/4-B</b>
	G3/8	0 ... 1,700	55	<b>9518</b>	<b>GRU-3/8-B</b>
	G1/2	0 ... 4,000	100	<b>9519</b>	<b>GRU-1/2-B</b>
	G3/4	0 ... 8,000	170	<b>9520</b>	<b>GRU-3/4-B</b>