

One-way flow control valve GRxA-NPT, GRxZ-NPT

FESTO



Characteristics

At a glance

One-way flow control valve for precise adjustment of the flow rate. Lightweight, compact and sturdy thanks to the polymer/metal combination.

- Flow control valve, flow control at one end
- For direct or inline mounting with different flow rate ranges
- Connections: plug-in connection on both sides, thread/plug-in connection

Diagrams

Link [grla](#)



The diagrams shown in this document are also available online. These can be used to display precise values.

Type code

001	Series	
GRLA	One-way flow control valve	
002	Pneumatic connection	
1/8	Male thread G1/8	
1/4	Male thread G1/4	
3/8	Male thread G3/8	
1/2	Male thread G1/2	
10-32-UNF	Male thread UNF	
1/8-NPT	Male thread 1/8 NPT	
1/4-NPT	Male thread 1/4 NPT	
3/8-NPT	Male thread 3/8 NPT	
1/2-NPT	Male thread 1/2 NPT	

003	Pneumatic connection 1	
	Connection size as for port 1 or 2	
QB-1/8	Push-in connector 1/8"	
QB-5/32	Push-in connector 5/32"	
QB-1/4	Push-in connector 1/4"	
QB-5/16	Push-in connector 5/16"	
QB-3/8	Push-in connector 3/8"	
QB-1/2	Push-in connector 1/2"	
004	Generation	
B	Series B	
U	Series U	

Datasheet

General technical data

General technical data						
Pneumatic connection, port 2	Male thread 1/4 NPT	10-32 UNF-2A	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT
Pneumatic connection, port 1	Female thread 1/4 NPT	10-32 UNF-2B, QB-5/32, QB-1/8, QB-1/4	1/8 NPT, QB-5/32, QB-1/4, QB-5/16	QB-1/4, QB-5/16, QB-3/8	3/8 NPT, QB-1/4, QB-5/16, QB-3/8, QB-1/2	1/2 NPT, QB-3/8, QB-1/2
Valve function	Exhaust air one-way flow control function					
Adjustment component	Slotted head screw					
Type of mounting	Screw-in	Screw-in, With male thread				
Mounting position	Any					
Nominal torque	–					
Tolerance for nominal tightening torque	–					

Operating and environmental conditions

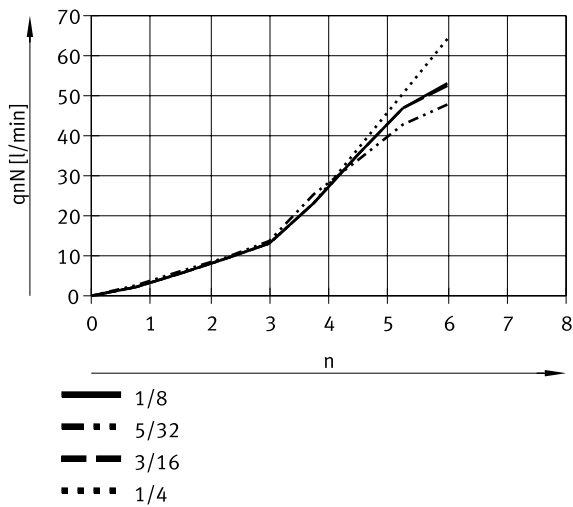
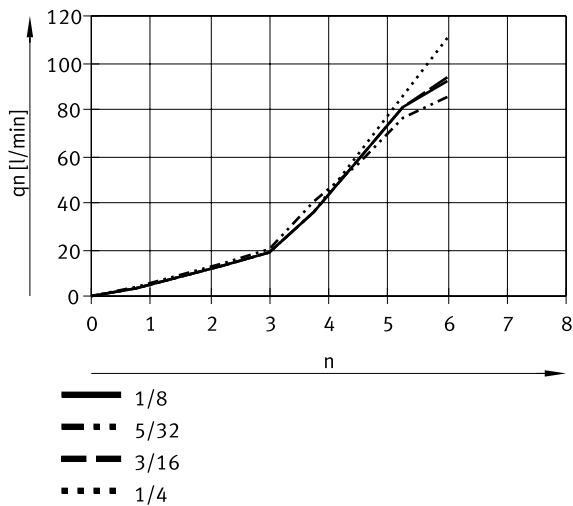
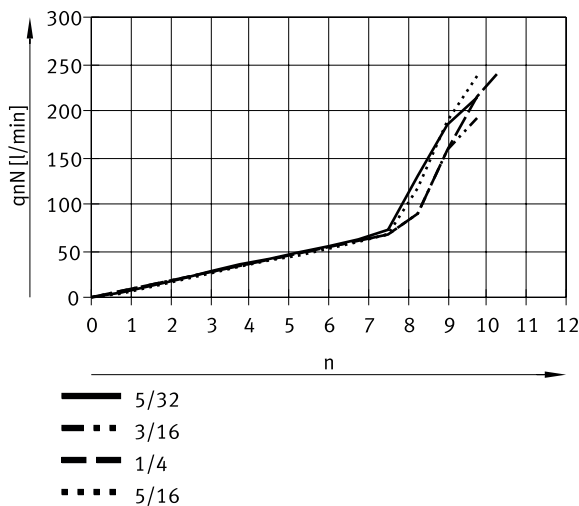
Pneumatic connection, port 2	Male thread 1/4 NPT	10-32 UNF-2A	1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT
Operating pressure complete temperature range	0.3 ... 10 bar	-13.793 ... 116.001 psi	0.3 ... 10 bar, -13.793 ... 116.001 psi	-13.793 ... 116.001 psi	-13.793 ... 116.001 psi, 0.3 ... 10 bar	-13.793 ... 116.001 psi
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]					
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)					
Standard nominal flow rate in blocked direction	450 ... 820 l/min	5.881 ... 10.325 cfm	26.172 ... 38.697 cfm	57.371 ... 85.743 cfm	68.235 ... 140.511 cfm	144.551 ... 220.418 cfm
Standard nominal flow rate in flow control direction	610 l/min	7.63 ... 10.15 cfm	33.94 ... 37.89 cfm	74.52 ... 83.95 cfm	88.44 ... 137.82 cfm	187.65 ... 215.93 cfm
Standard flow rate in flow control direction 0.6->0 MPa (6->0 bar, 87->0 psi)	1,200 l/min	13.5 ... 17.5 cfm	51.6 ... 61.9 cfm	112.2 ... 141 cfm	126.1 ... 226.7 cfm	268 ... 341.6 cfm
Standard flow rate in non-return direction 0.6->0 MPa (6->0 bar, 87->0 psi)	–	13.467 ... 18.406 cfm	51.176 ... 64.195 cfm	112.229 ... 146.347 cfm	126.145 ... 235.681 cfm	268.003 ... 355.092 cfm
Ambient temperature	-10 ... 60°C	-10 ... 60°C, 32 ... 140°F		32 ... 140°F	-10 ... 60°C, 32 ... 140°F	
Media temperature	-10 ... 60°C	-10 ... 60°C, 32 ... 140°F		32 ... 140°F	-10 ... 60°C, 32 ... 140°F	
Corrosion resistance class CRC ²⁾	2 - Moderate corrosion stress	1 - Low corrosion stress				

2) More information www.festo.com/x/topic/kbk

Materials

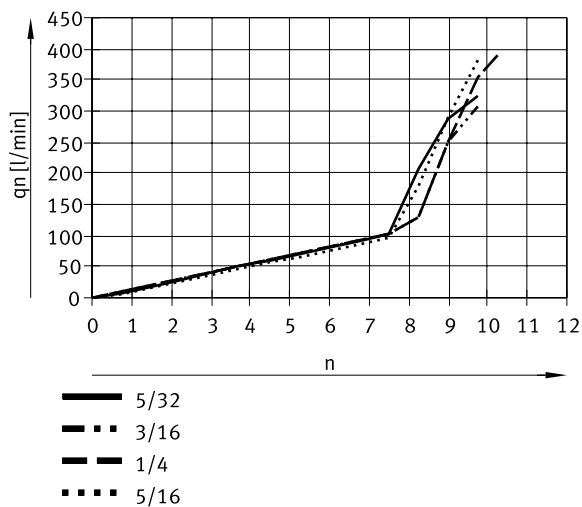
Material knurled head	Brass, nickel-plated
Material adjusting screw	Brass, nickel-plated
Material hollow bolt	Wrought aluminium alloy, Brass, nickel-plated
Material release ring	POM
Material swivel fitting	Reinforced PBT, Die-cast zinc
Material screwed plug	Wrought aluminium alloy, Brass, nickel-plated
Material seals	NBR
Note on materials	RoHS compliant
LABS (PWIS) conformity	VDMA24364-B2-L, VDMA24364 zone III
Cleanroom suitability, measured according to ISO 14644-14	Class 4 according to ISO 14644-1

Datasheet

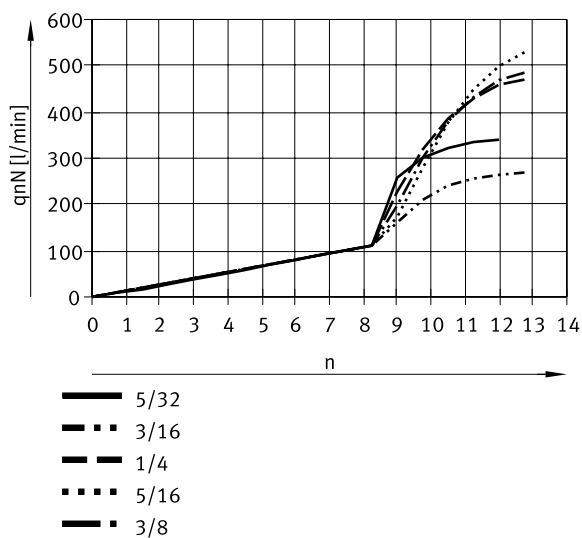
Standard nominal flow rate q_N at 6 bar $\rightarrow$ 0 bar as a function of the turns of the adjusting screw n (GRLA-10-32UNF-QB-...-U)Standard flow rate q_N at 6 $\rightarrow$ 0 bar as a function of the turns of the flow control screw n (pneumatic connection UNF10-32)Standard nominal flow rate q_N at 6 bar $\rightarrow$ 0 bar as a function of the turns of the adjusting screw n (GRLA-1/8-QB-...-U)

Datasheet

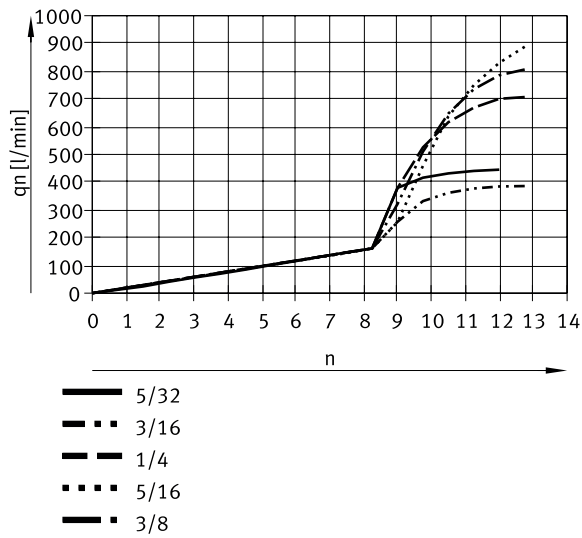
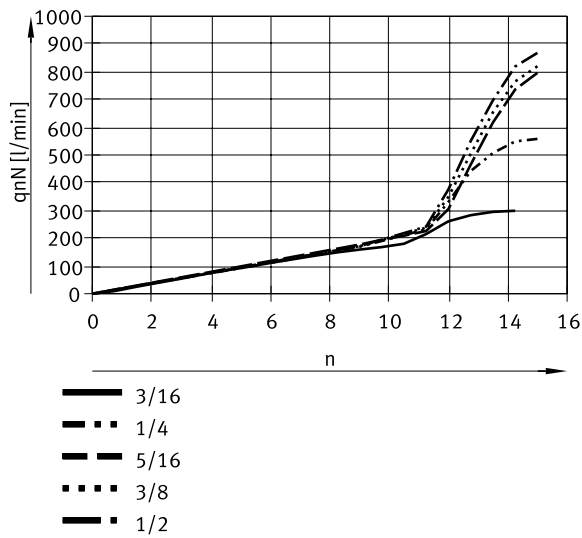
Standard flow rate q_n at 6 → 0 bar as a function of the turns of the flow control screw n (pneumatic port NPT1/8-27)



Standard nominal flow rate q_n at 6 bar → 0 bar as a function of the turns of the adjusting screw n (GRLA-1/4-QB-...-U)

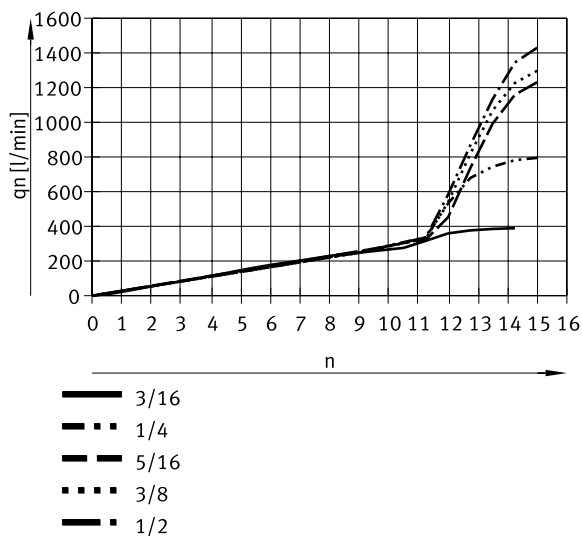


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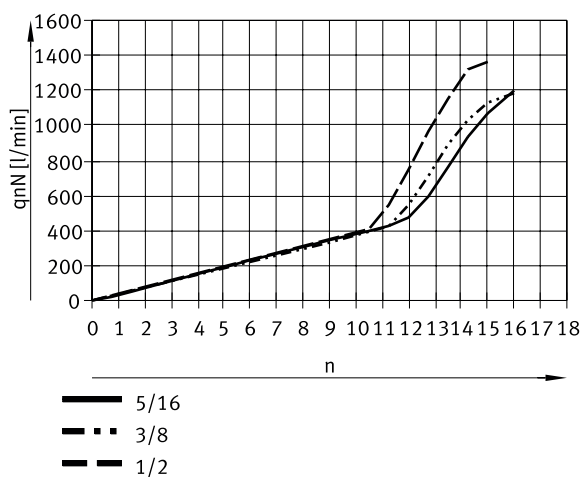
Standard flow rate q_n at 6 → 0 bar as a function of the turns of the flow control screw n (pneumatic connection NPT1/4-18)Standard nominal flow rate q_n at 6 bar → 0 bar as a function of the turns of the adjusting screw n (GRLA-3/8-QB-...-U)

Datasheet

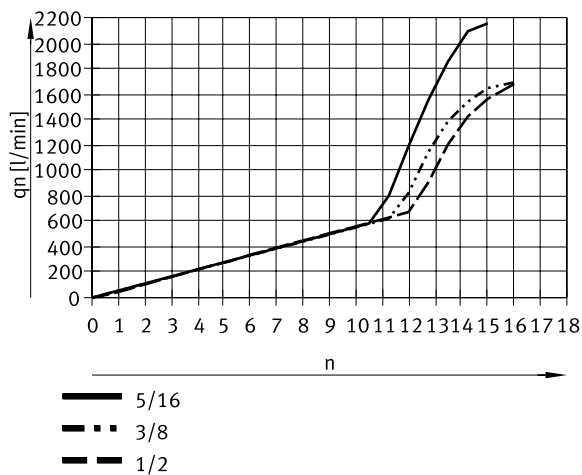
Standard flow rate q_n at 6 → 0 bar as a function of the turns of the flow control screw n (pneumatic connection NPT3/8-18)



Standard nominal flow rate q_n at 6 bar → 0 bar as a function of the turns of the adjusting screw n (GRLA-1/2-QB-...-U)

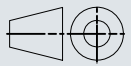
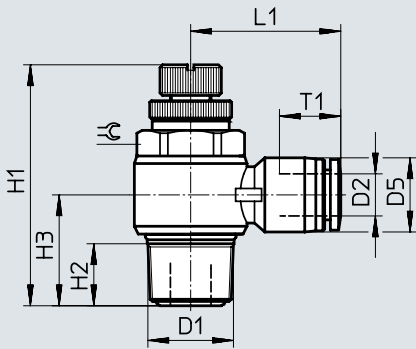


Standard flow rate q_n at 6 → 0 bar as a function of the turns of the flow control screw n (pneumatic port NPT1/2-14)



Dimensions

Dimensions – One-way flow control valves GRLA, NPT

Download CAD data www.festo.com

	D1	D2 ø	D5 ø	H1		H2	H3	L1	T1	≙
				min.	max.					
GRLA-10-32-UNF	UNF10/32	1/8	7,8	26,9	29,1	3,6	10,3	16,5	11,4	5/16
		5/32	10,5				10,3	20,3	14,9	
		3/16	11,5				10,4	21,6	15,9	
		1/4	13,0				10,6	23,7	16,8	
GRLA-1/8	NPT1/8	5/32	10,5	34,9	39,8	8,2	15,1	23,7	14,9	7/16
		3/16	11,5				15,1	24,3	15,9	
		1/4	13,0				15,2	24,9	16,8	
		5/16	14,5				16,2	26,6	18,7	
GRLA-1/4	NPT1/4	5/32	10,5	40,6	47,0	11,0	18,4	25,6	14,9	19/32
		3/16	11,5				18,4	26,2	15,9	
		1/4	13,0				18,4	26,8	16,8	
		5/16	14,5				19,2	28,5	18,7	
		3/8	17,5				20,7	30,9	20,1	
GRLA-3/8	NPT3/8	3/16	11,5	47,9	54,9	13,1	21,9	27,8	15,9	3/4
		1/4	13,0				21,9	28,4	16,8	
		5/16	14,5				21,9	29,6	18,7	
		3/8	17,5				22,6	30,7	20,1	
		1/2	20,8				24,1	34,0	22,9	
GRLA-1/2	NPT1/2	5/16	14,5	53,9	61,3	16,5	26,5	32,4	18,7	15/16
		3/8	17,5				26,5	33,2	20,1	
		1/2	20,8				27,7	36,5	22,9	

Ordering data

Ordering data						
	Pneumatic connection, port 2	Pneumatic connection, port 1	Corrosion resistance class CRC	Product weight	Part no.	Type
	Male thread 1/4 NPT	Female thread 1/4 NPT	2 - Moderate corrosion stress		151547	GRLA-1/4-NPT-B
	10-32 UNF-2A	10-32 UNF-2B			151572	GRLA-10-UNF-B
		QB-5/32	1 - Low corrosion stress	9.922 oz	564840	GRLA-10-32-UNF-QB-5/32-U
		QB-1/8		8.505 oz	564839	GRLA-10-32-UNF-QB-1/8-U
		QB-1/4		10.773 oz	564842	GRLA-10-32-UNF-QB-1/4-U
	1/8 NPT	1/8 NPT	1 - Low corrosion stress		151539	GRLA-1/8-NPT-B
		QB-5/32		18.711 oz	534656	GRLA-1/8-QB-5/32-U
		QB-1/4		19.845 oz	534658	GRLA-1/8-QB-1/4-U
		QB-5/16		21.829 oz	534659	GRLA-1/8-QB-5/16-U
	1/4 NPT	QB-1/4		35.721 oz	534661	GRLA-1/4-QB-1/4-U
		QB-5/16		37.706 oz	534662	GRLA-1/4-QB-5/16-U
		QB-3/8		39.123 oz	534663	GRLA-1/4-QB-3/8-U
	3/8 NPT	3/8 NPT	1 - Low corrosion stress		151555	GRLA-3/8-NPT-B
		QB-1/4		66.623 oz	534664	GRLA-3/8-QB-1/4-U
		QB-5/16		69.741 oz	534665	GRLA-3/8-QB-5/16-U
		QB-3/8		70.308 oz	534666	GRLA-3/8-QB-3/8-U
		QB-1/2		73.993 oz	534667	GRLA-3/8-QB-1/2-U
	1/2 NPT	1/2 NPT	1 - Low corrosion stress		151559	GRLA-1/2-NPT-B
		QB-3/8		109.147 oz	564846	GRLA-1/2-QB-3/8-U
		QB-1/2		119.07 oz	564847	GRLA-1/2-QB-1/2-U