



- Minimal dimensions
- Constant output pressure
- Constant differential pressure between the input and output
- Versions with or without pressure gauge
- With screw-in thread M5 ... R $\frac{1}{2}$ or push-in connector
 \varnothing 4 ... 12 mm

Pressure and differential pressure regulators

Features

FESTO



LRMA-...-QS



LR-...-QS




LRL-...-QS



LRL-...-QS

Pressure regulators LR, LRMA


-  - Flow rate
22 ... 127 l/min

- With threaded and push-in connector
- Screw-in thread
M5, R $\frac{1}{8}$, R $\frac{1}{4}$
- Push-in connector
for tubing O.D. 4 ... 8 mm
- Push-in connector, can be rotated
360°

The pressure regulator maintains an essentially constant output pressure on the secondary side independent of pressure fluctuations on the primary side and air consumption.

The primary pressure at the screw-in thread is reduced when air is exhausted from the QS push-in connector.

Differential pressure regulators LRL, LRL

-  - Flow rate
30 ... 760 l/min

- With threaded and push-in connector
- Screw-in thread
M5, R $\frac{1}{8}$, R $\frac{1}{4}$, R $\frac{3}{8}$, R $\frac{1}{2}$
- Push-in connector
for tubing O.D. 4 ... 12 mm
- Push-in connector, can be rotated
360°

The differential pressure regulator maintains a manually adjusted differential pressure between the primary pressure at the screw-in thread and the output pressure at the QS push-in connector.

Pressure applied at the QS push-in connector can be exhausted with no change in pressure at the thread connection end thanks to an integrated non-return valve.

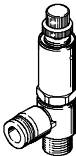
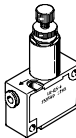
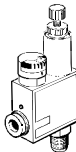
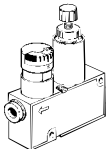
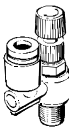

-  - Note

The differential pressure regulator has no exhaust, i.e. increasing secondary pressure cannot be reduced.

Pressure and differential pressure regulators

Product range overview

FESTO

Function	Design	Type	Pneumatic connection					→ Page		
			Thread	For tubing O.D. [mm]						
				4	6	8	10		12	
Pressure regulating valve without pressure gauge	With QS push-in connector and screw-in thread									
		LR-...-QS-...	M5	■	■	-	-	-	2 / 5.4-5	
			R1/8	■	■	■	-	-		
			R1/4	-	■	■	-	-		
	With QS push-in connector at both ends									
		LR-QS-...	-	■	■	■	-	-	2 / 5.4-5	
	Pressure regulator with pressure gauge	With QS push-in connector and screw-in thread								
			LRMA-...-QS-...	M5	■	■	-	-	-	2 / 5.4-9
				R1/8	■	■	■	-	-	
				R1/4	-	■	■	-	-	
With QS push-in connector at both ends										
		LRMA-QS-...	-	■	■	■	-	-	2 / 5.4-9	
Differential pressure regulator without pressure gauge		With QS push-in connector at top and screw-in thread								
			LRL-...-QS-...	M5	■	■	-	-	-	2 / 5.5-0
				R1/8	■	■	■	-	-	
				R1/4	-	■	■	■	-	
	R3/8			-	-	■	■	■		
	R1/2			-	-	-	-	■		
	With QS push-in connector on side and screw-in thread									
		LRLL-...-QS-...	M5	■	■	-	-	-	2 / 5.5-0	
			R1/8	■	■	■	-	-		
			R1/4	-	■	■	■	-		
			R3/8	-	-	■	■	■		
			R1/2	-	-	-	-	■		

Flow, non-return and regulating valves
Pressure regulators

5.4

Type codes

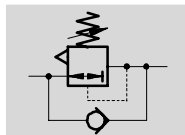
Type	
Pressure regulator	
LR	Without pressure gauge
LRMA	With pressure gauge
Differential pressure regulator	
LRL	Outlet on top
LRLL	Outlet on the side
Screw-in thread	
M5	Metric thread M5
1/8	Pipe thread R1/8
1/4	Pipe thread R1/4
3/8	Pipe thread R3/8
1/2	Pipe thread R1/2
Tubing connection	
Type of connection	
QS	Push-in connector for standard O.D. tubing
For tubing O.D.	
4	4 mm
6	6 mm
8	8 mm
10	10 mm
12	12 mm


Pressure regulators LR

Technical data

FESTO

Function



-  - Flow rate
22 ... 127 l/min

- Minimal dimensions
- Constant output pressure
- Version without pressure gauge
- Screw-in thread M5 ... R1/4 or push-in connector Ø 4 ... 8 mm



LR-QS-...

LR-...-QS-...

General technical data		
Design		Directly actuated piston regulator with through pressure supply
Regulating function		With secondary venting, output pressure constant
Actuator lock		Knurled screw with lock nut
Mounting position		Any
With QS push-in connector and metric thread with sealing ring		
Type of mounting		Can be screwed in
Materials	Housing	Polybutylene terephthalate
	Threaded plug	Nickel plated brass
With QS push-in connector and PTFE-coated pipe thread		
Type of mounting		Can be screwed in
Materials	Housing	Polybutylene terephthalate
	Threaded plug	Nickel plated brass
	Threaded seal	Polytetrafluoroethylene
With QS push-in connector at both ends		
Type of mounting		Via through-holes
Materials	Housing	Polybutylene terephthalate

Operating and environmental conditions		
Operating medium	Filtered compressed air, lubricated or unlubricated	
Input pressure	[bar]	0 ... 9
Pressure regulation range	[bar]	1 ... 8
Ambient temperature	[°C]	0 ... 60

Pressure regulators LR

Technical data

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Weights [g]			
Screw-in thread	M5	R1/8	R1/4
With QS push-in connector and metric thread with sealing ring			
QS-4	16	–	–
QS-6	16	–	–
With QS push-in connector and PTFE-coated pipe thread			
QS-4	–	32.5	–
QS-6	–	33.5	54
QS-8	–	35	55

Weights [g]	
With QS push-in connector at both ends	
QS-4	33
QS-6	33
QS-8	56

Standard nominal flow rate [l/min]			
Screw-in thread	M5	R1/8	R1/4
With QS push-in connector and metric thread with sealing ring			
QS-4	22	–	–
QS-6	41	–	–
With QS push-in connector and PTFE-coated pipe thread			
QS-4	–	46	–
QS-6	–	63	98
QS-8	–	69	101

Standard nominal flow rate [l/min]	
With QS push-in connector at both ends	
QS-4	67
QS-6	70
QS-8	127

Pressure regulators LR

Technical data

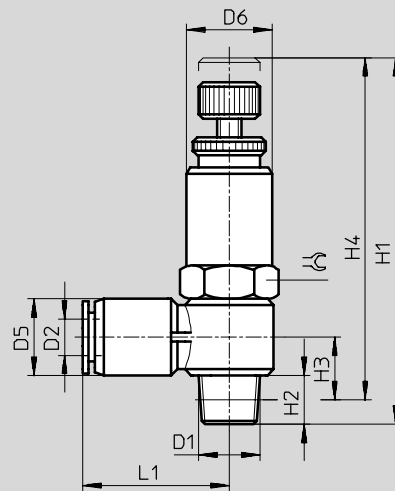
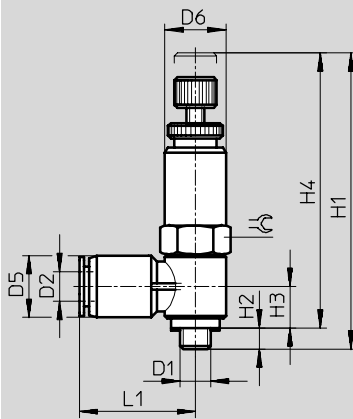
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Dimensions

Download CAD data → www.festo.com/en/engineering

With QS push-in connector and screw-in thread M5

With QS push-in connector and screw-in thread R $\frac{1}{8}$, R $\frac{1}{4}$



Screw-in thread D1	D2 Ø	D5 Ø	D6 Ø	H1		H2	H3	H4		L1	⌀
				min.	max.			min.	max.		
M5	4	8	10	44.5	48.5	3	7	41.5	45.5	16	10
	6	10.5	10	44.5	48.5	3	7.5	41.5	45.5	17.8	10
R $\frac{1}{8}$	4	10	14	56	60	8	10.5	52	56	21.5	14
	6	12.5	14	56	60	8	10.5	52	56	23.5	14
	8	14.5	14	56	60	8	11.5	52	56	27	14
R $\frac{1}{4}$	6	12.5	17	61	65	11	12	55	59	25.5	17
	8	14.5	17	61	65	11	13	55	59	28.5	17

Flow, non-return and regulating valves
Pressure regulators

5.4

Pressure regulators LR

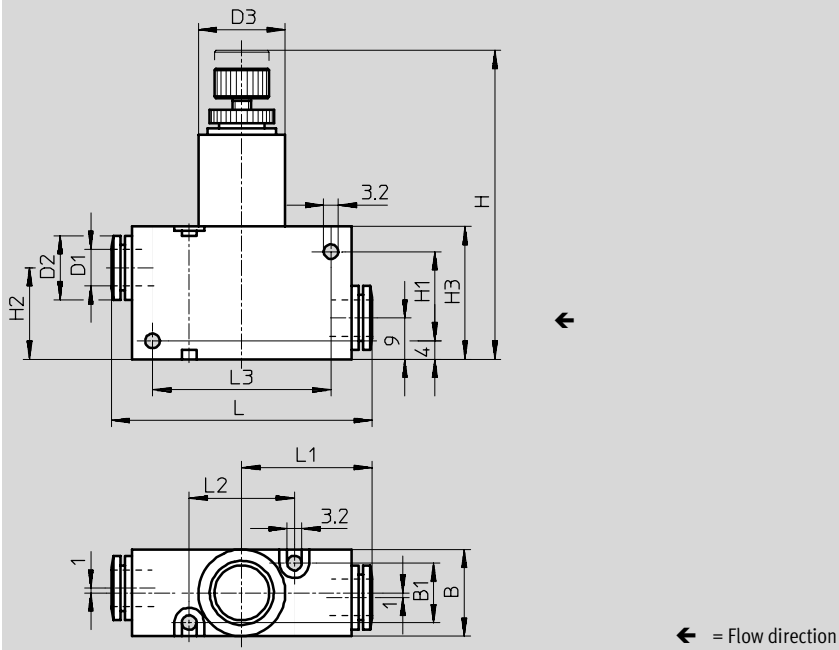
Technical data

FESTO

Dimensions

Download CAD data → www.festo.com/en/engineering

With QS push-in connector at both ends



Push-in connector	B	B1	D1 Ø	D2 Ø	D3 Ø	H		H1	H2	H3	L	L1	L2	L3
						min.	max.							
QS-4	15	9	4	10	15	59	63	17	19	25	44	22	20	30
QS-6			6	12							45	22.5		
QS-8	19	13	8	14	19	63.5	67.5	21	21	29	57	28.5	23	39

Ordering data

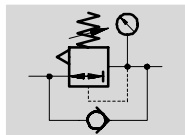
	Description	Screw-in thread	For tubing O.D. [mm]	Part No.	Type
	With QS push-in connector and metric thread with sealing ring	M5	4	153 532	LR-M5-QS-4
			6	153 533	LR-M5-QS-6
	With QS push-in connector and PTFE-coated pipe thread	R1/8	4	153 534	LR-1/8-QS-4
			6	153 535	LR-1/8-QS-6
			8	153 536	LR-1/8-QS-8
		R1/4	6	153 537	LR-1/4-QS-6
			8	153 538	LR-1/4-QS-8
	With QS push-in connector at both ends	-	4	153 540	LR-QS-4
			6	153 541	LR-QS-6
			8	153 542	LR-QS-8


Pressure regulators LRMA, with pressure gauge

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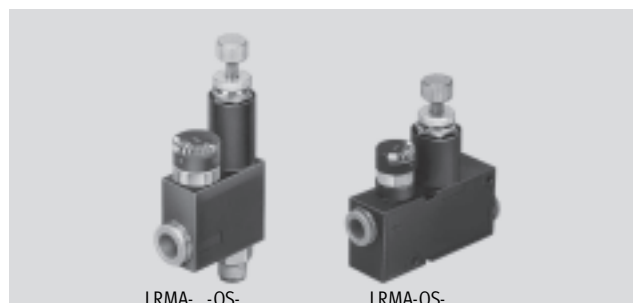
Technical data

Function



-  - Flow rate
36 ... 124 l/min

- Minimal dimensions
- Constant output pressure
- Version with pressure gauge
- Screw-in thread M5 ... R1/4 or push-in connector Ø 4 ... 8 mm



General technical data		
Design		Directly actuated piston regulator with through pressure supply
Regulating function		With secondary venting, output pressure constant
Actuator lock		Knurled screw with lock nut
Mounting position		Any
With QS push-in connector and metric thread with sealing ring		
Type of mounting		Can be screwed in
Materials	Housing	Polybutylene terephthalate
	Threaded plug	Nickel plated brass
With QS push-in connector and PTFE-coated pipe thread		
Type of mounting		Can be screwed in
Materials	Housing	Polybutylene terephthalate
	Threaded plug	Nickel plated brass
	Threaded seal	Polytetrafluoroethylene
With QS push-in connector at both ends		
Type of mounting		Via through-holes
Materials	Housing	Polybutylene terephthalate

Operating and environmental conditions		
Operating medium	Filtered compressed air, lubricated or unlubricated	
Input pressure	[bar]	0 ... 9
Pressure regulation range	[bar]	1 ... 8
Ambient temperature	[°C]	0 ... 60

Weights [g]			
Screw-in thread	M5	R1/8	R1/4
With QS push-in connector and metric thread with sealing ring			
QS-4	28	–	–
QS-6	28	–	–
With QS push-in connector and PTFE-coated pipe thread			
QS-4	–	54.5	–
QS-6	–	54.5	55
QS-8	–	83.5	83.5

Weights [g]	
With QS push-in connector at both ends	
QS-4	45
QS-6	45
QS-8	68

Pressure regulators LRMA, with pressure gauge

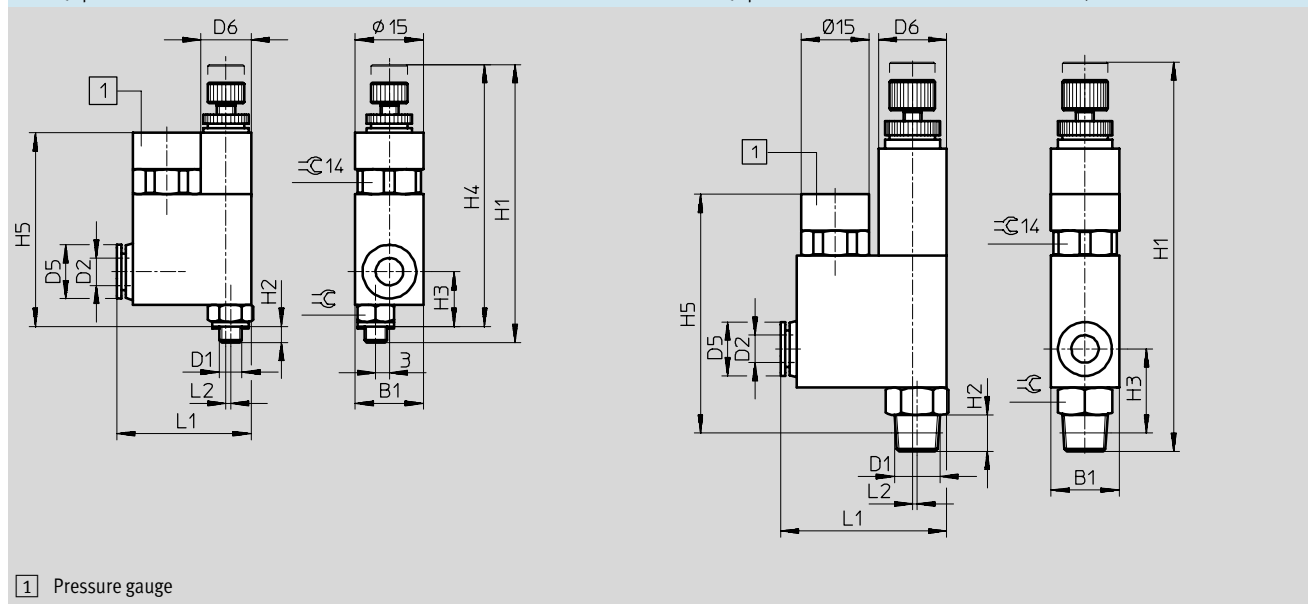
Technical data

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Standard nominal flow rate [l/min]			
Screw-in thread	M5	R $\frac{1}{8}$	R $\frac{1}{4}$
With QS push-in connector and metric thread with sealing ring			
QS-4	36	–	–
QS-6	42	–	–
With QS push-in connector and PTFE-coated pipe thread			
QS-4	–	60	–
QS-6	–	75	96
QS-8	–	87	97

Standard nominal flow rate [l/min]	
With QS push-in connector at both ends	
QS-4	50
QS-6	76
QS-8	124

Dimensions	Download CAD data → www.festo.com/en/engineering
With QS push-in connector and screw-in thread M5	With QS push-in connector and screw-in thread R $\frac{1}{8}$, R $\frac{1}{4}$



Screw-in thread D1	D2 Ø	B1	D5 Ø	D6 Ø	H1		H2	H3	H4		H5	L1	L2	≙
					min.	max.			min.	max.				
M5	4	15.1	9.8	11	57.1	61.2	3.5	11.8	53.6	57.7	42.8	28	1.1	8
	6	15.1	11.8	11	57.1	61.2	3.5	11.8	53.6	57.7	42.8	28.1	1.1	8
R $\frac{1}{8}$	4	15.1	10	15	77.5	81.5	8	18.5	–	–	51.5	36	0.5	12
	6	15.1	12	15	77.5	81.5	8	18.5	–	–	51.5	36.5	0.5	12
	8	15	14	15	77.5	81.5	8	18.5	–	–	51.5	36.5	1	12
R $\frac{1}{4}$	6	19	12	19	85.5	89.5	11	22.5	–	–	57	39.5	0.5	16
	8	19	14	19	85.5	89.5	11	22.5	–	–	57	39.5	1	16

Pressure regulators LRMA, with pressure gauge

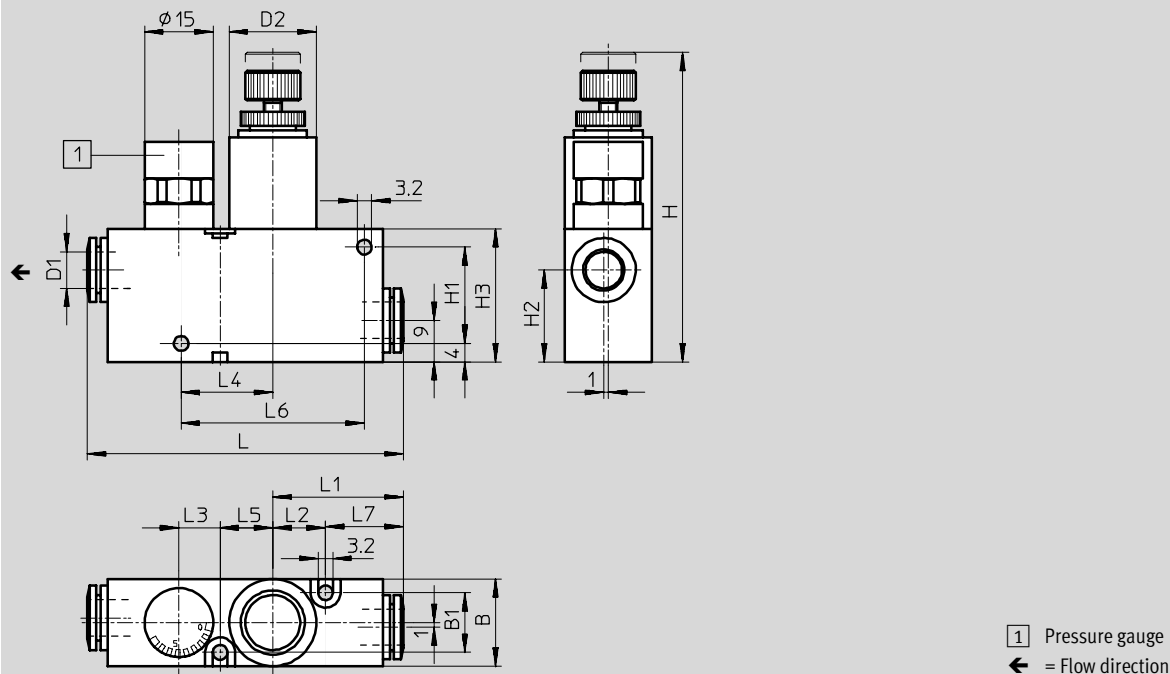
Technical data

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Dimensions

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With QS push-in connector at both ends



Push-in connector	B	B1	D1 Ø	D2 Ø	H min.	H max.	H1	H2	H3	L	L1	L2	L3	L4	L5	L6	L7
QS-4	15	9	4	15	59	63	17	19	25	49.5	22.5	10	10	15	10	30	12
QS-6			6														
QS-8	19	13	8	19	63.5	67.5	21	21	29	59.7	28.5	11.5	9	19.6	11.5	39	17

Ordering data

	Description	Screw-in thread	For tubing O.D. [mm]	Part No.	Type
	With QS push-in connector and metric thread with sealing ring	M5	4	153 488	LRMA-M5-QS-4
			6	153 490	LRMA-M5-QS-6
	With QS push-in connector and PTFE-coated pipe thread	R ¹ / ₈	4	153 489	LRMA- ¹ / ₈ -QS-4
			6	153 491	LRMA- ¹ / ₈ -QS-6
			8	153 493	LRMA- ¹ / ₈ -QS-8
		R ¹ / ₄	6	153 492	LRMA- ¹ / ₄ -QS-6
			8	153 494	LRMA- ¹ / ₄ -QS-8
	With QS push-in connector at both ends	–	4	153 495	LRMA-QS-4
			6	153 496	LRMA-QS-6
			8	153 497	LRMA-QS-8

Flow, non-return and regulating valves
Pressure regulators

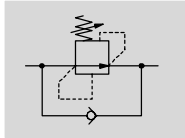
5.4

Differential pressure regulators LRL/LRLL

Technical data

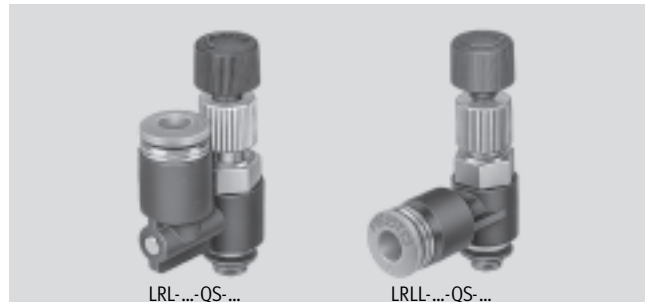
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Function



Flow rate
 30 ... 760 l/min

- Minimal dimensions
- Constant differential pressure between the input and output
- With screw-in thread M5 ... R $\frac{1}{2}$ or push-in connector \varnothing 4 ... 12 mm



General technical data		
Regulating function	With return flow, differential pressure constant	
Design	Directly actuated piston regulator with through pressure supply	
Actuator lock	Knurled screw with lock nut	
Type of mounting	Can be screwed in	
Mounting position	Any	
Materials	Housing	Polybutylene terephthalate
	Threaded plug	Nickel plated brass
	Threaded seal	Polytetrafluoroethylene

Operating and environmental conditions		
Operating medium	Filtered compressed air, lubricated or unlubricated	
Input pressure	[bar]	0 ... 9
Pressure regulation range	[bar]	1 ... 8
Ambient temperature	[°C]	0 ... 60

Standard nominal flow rate [l/min]										
Screw-in thread	M5		R $\frac{1}{8}$		R $\frac{1}{4}$		R $\frac{3}{8}$		R $\frac{1}{2}$	
	open	closed	open	closed	open	closed	open	closed	open	closed
Outlet on top										
QS-4	30	30	96	93	–	–	–	–	–	–
QS-6	30	30	115	115	241	240	–	–	–	–
QS-8	–	–	120	115	224	224	463	393	–	–
QS-10	–	–	–	–	231	231	476	423	–	–
QS-12	–	–	–	–	–	–	438	379	760	730
Outlet on the side										
QS-4	30	30	100	96	–	–	–	–	–	–
QS-6	32	31	155	140	267	266	–	–	–	–
QS-8	–	–	115	110	268	264	474	340	–	–
QS-10	–	–	–	–	269	262	456	411	–	–
QS-12	–	–	–	–	–	–	518	423	730	700

Differential pressure regulators LRL/LRLL

Technical data

FESTO

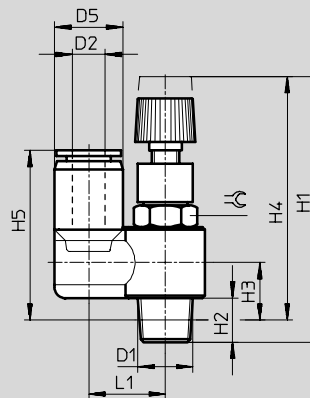
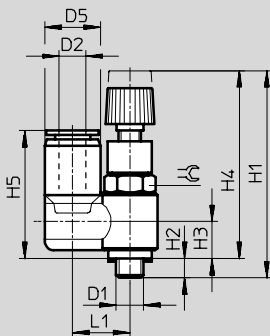
Weights [g]					
Screw-in thread	M5	R $\frac{1}{8}$	R $\frac{1}{4}$	R $\frac{3}{8}$	R $\frac{1}{2}$
Outlet on top (LRL)					
QS-4	9.5	20	–	–	–
QS-6	11	21.5	37.5	–	–
QS-8	–	22.5	39	68.5	–
QS-10	–	–	42.5	72	–
QS-12	–	–	–	76	108
Outlet on side (LRLL)					
QS-4	8.8	19	–	–	–
QS-6	9.8	20	36.5	–	–
QS-8	–	21.5	37.5	66.5	–
QS-10	–	–	41.5	69	–
QS-12	–	–	–	73	105

Dimensions – Outlet on top

Download CAD data → www.festo.com/en/engineering

With QS push-in connector and screw-in thread M5

With QS push-in connector and screw-in thread R $\frac{1}{8}$, R $\frac{1}{4}$, R $\frac{3}{8}$, R $\frac{1}{2}$



Screw-in thread D1	D2 Ø	D5 Ø	H1		H2	H3	H4		H5	L1	≡
			min.	max.			min.	max.			
M5	4	10.2	35.5	39	3	6	32.5	36	23.5	10.5	8
	6	12.6	35.5	39	3	6	32.5	36	26	12.2	8
R $\frac{1}{8}$	4	10	44.5	48.5	8	10.5	40.5	44.5	28.5	13	10
	6	12.5	44.5	48.5	8	10.5	40.5	44.5	31	14	10
	8	14.5	44.5	48.5	8	10.5	40.5	44.5	32	15	10
R $\frac{1}{4}$	6	12.5	48.5	52	11	12	42.5	46	32	17	14
	8	14.5	48.5	52	11	12	42.5	46	33.5	18	14
	10	17.5	48.5	52	11	12	42.5	46	36	20	14
R $\frac{3}{8}$	8	14.5	56	59	12	15	49.5	52.5	37.5	19	19
	10	17.5	56	59	12	15	49.5	52.5	39.5	21	19
	12	21	56	59	12	15	49.5	52.5	42.5	22.5	24
R $\frac{1}{2}$	12	21	62	64.5	15	18	54	56.5	47	25.5	24

Differential pressure regulators LRLL

Technical data

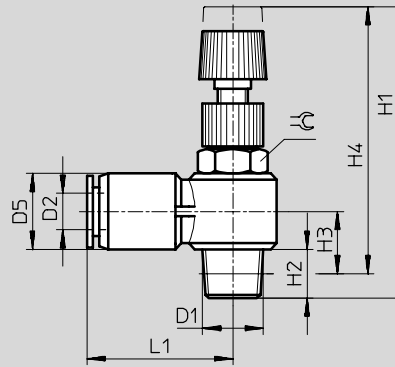
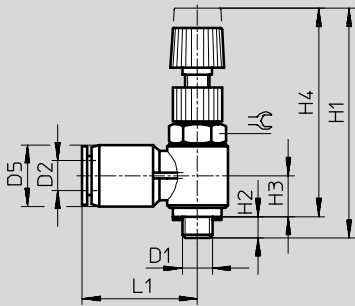
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Dimensions – Outlet on side

Download CAD data → www.festo.com/en/engineering

With QS push-in connector and screw-in thread M5

With QS push-in connector and screw-in thread R1/8, R1/4, R3/8, R1/2





Screw-in thread D1	D2 Ø	D5 Ø	H1		H2	H3	H4		L1	⌀C
			min.	max.			min.	max.		
M5	4	9.9	35.7	38.8	3.4	7.1	32.3	35.4	19.9	8
	6	12.4	35.7	38.8	3.4	8.3	32.3	35.4	24	8
R1/8	4	10	44.5	48.5	8	9.5	40.5	44.5	21.5	10
	6	12.5	44.5	48.5	8	10.5	40.5	44.5	23.5	10
	8	14.5	44.5	48.5	8	11.5	40.5	44.5	27	10
R1/4	6	12.5	48.5	52	11.5	12	42.5	46	25.5	14
	8	14.5	48.5	52	11.5	13	42.5	46	28.5	14
	10	17.5	48.5	52	18.5	15	42.5	46	31	14
R3/8	8	14.5	56	59	13	15	49.5	52.5	29	19
	10	17.5	56	59	13	16.5	49.5	52.5	31	19
	12	21	56	59	13	18	49.5	52.5	37	24
R1/2	12	21	62	64.5	16	19.5	54	56.5	36.5	24

Differential pressure regulators LRL/LRLL

Technical data

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Ordering data					
Circuit symbol	Description	Threaded connection	For tubing O.D. [mm]	Part No.	Type
Outlet on top					
	With QS push-in connector and metric thread with sealing ring	M5	4	153 510	LRL-M5-QS-4
			6	153 512	LRL-M5-QS-6
	With QS push-in connector and PTFE-coated pipe thread	R1/8	4	153 511	LRL-1/8-QS-4
			6	153 513	LRL-1/8-QS-6
			8	153 515	LRL-1/8-QS-8
		R1/4	6	153 514	LRL-1/4-QS-6
			8	153 516	LRL-1/4-QS-8
			10	153 518	LRL-1/4-QS-10
		R3/8	8	153 517	LRL-3/8-QS-8
			10	153 519	LRL-3/8-QS-10
			12	153 520	LRL-3/8-QS-12
	R1/2	12	153 521	LRL-1/2-QS-12	
Outlet on the side					
	With QS push-in connector and metric thread with sealing ring	M5	4	153 498	LRLL-M5-QS-4
			6	153 500	LRLL-M5-QS-6
	With QS push-in connector and PTFE-coated pipe thread	R1/8	4	153 499	LRLL-1/8-QS-4
			6	153 501	LRLL-1/8-QS-6
			8	153 503	LRLL-1/8-QS-8
		R1/4	6	153 502	LRLL-1/4-QS-6
			8	153 504	LRLL-1/4-QS-8
			10	153 506	LRLL-1/4-QS-10
		R3/8	8	153 505	LRLL-3/8-QS-8
			10	153 507	LRLL-3/8-QS-10
			12	153 508	LRLL-3/8-QS-12
	R1/2	12	153 509	LRLL-1/2-QS-12	

Flow, non-return and regulating valves
Differential pressure regulators

5.5

