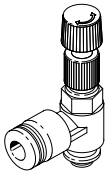
Differential pressure regulators LRL/LRLL

FESTO

Product range overview

Function	Design	Type	Pneumatic connection						→ Page/ Internet
			Thread	For tubing O.D. [mm]					
				4	6	8	10	12	
Differential pressure regulator without pressure gauge	**With push-in connector at the top and connecting thread**								
		LRL-...-QS-...	M5	■	■	–	–	–	3
			R1/8	■	■	■	–	–	
			R1/4	–	■	■	■	–	
			R3/8	–	–	■	■	■	
			R1/2	–	–	–	–	■	
	With push-in connector at the side and connecting thread								
		LRLL-...-QS-...	M5	■	■	–	–	–	3
			R1/8	■	■	■	–	–	
			R1/4	–	■	■	■	–	
			R3/8	–	–	■	■	■	
			R1/2	–	–	–	–	■	

Type codes

001	Series	
LRL	Differential pressure regulator	
LRLL	Differential pressure regulator	

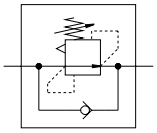
002	Pneumatic connection 1	
1/8	Male thread R1/8	
1/4	Male thread R1/4	
3/8	Male thread R3/8	
1/2	Male thread R1/2	
M5	Male thread M5	

003	Pneumatic connection 2	
QS-4	Push-in connector 4 mm	
QS-6	Push-in connector 6 mm	
QS-8	Push-in connector 8 mm	
QS-10	Push-in connector 10 mm	
QS-12	Push-in connector 12 mm	

004	System of units	
	Metric	

Data sheet

Function



- Standard nominal flow rate
  30 ... 760 l/min

LRL-...-QS

LRLL-...-QS

The differential pressure regulator maintains a manually set differential pressure between the primary pressure at the threaded connection and the output pressure at the push-in connector.

Pressure applied at the push-in connector can be exhausted with no change in pressure at the threaded connection thanks to an integrated check valve.

- Minimal dimensions
- Constant differential pressure between input and output
- Connecting thread M5, R1/8, R1/4, R3/8, R1/2
- Push-in connector for tubing O.D. 4, 6, 8, 10, 12 mm
- Rotatable 360°

Note

The differential pressure regulator does not have an exhaust, i.e. if the output pressure increases this cannot be relieved.

General technical data						
Pneumatic connection 1		M5	R1/8	R1/4	R3/8	R1/2
Pneumatic connection 2		QS-4, QS-6	QS-4, QS-6, QS-8	QS-6, QS-8, QS-10	QS-8, QS-10, QS-12	QS-12
Design		Directly actuated piston regulator with through pressure supply				
Regulator function		With return flow, differential pressure constant				
Pressure regulation range	[bar]	2 ... 6				
Actuator lock		Knurled screw with lock nut				
Type of mounting		Screw-in				
Mounting position		Any				
Type of seal on screwed trunnion		Sealing ring	Coating			

Operating and environmental conditions		
Supply pressure 1	[MPa]	0 ... 0.9
	[bar]	0 ... 9
	[psi]	0 ... 130.5
Operating medium		Compressed air to ISO 8573-1:2010 [7:–:–]
Note on the operating/pilot medium		Lubricated operation possible (in which case lubricated operation will always be required)
PWIS conformity		VDMA24364-B1/B2-L
Ambient temperature	[°C]	0 ... 60

Materials	
Housing	PBT, reinforced
Screwed trunnion	Nickel-plated brass
Threaded seal	PTFE
Note on materials	RoHS-compliant

Data sheet

Dimensions – LRL, outlet on top

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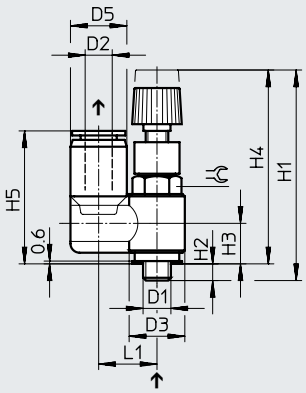
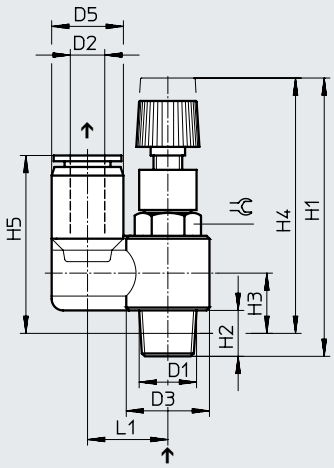
Pneumatic connection 1: M5



Pneumatic connection 1: R1/8, R1/4, R3/8, R1/2



↑ Flow direction with pressure reduction

Note

Pressure applied at the push-in connector D2 can be exhausted with no change in pressure at the threaded connection D1 thanks to an integrated check valve.

Pneumatic connection 1 D1	D2 ø	D3 ø	D5 ø	H1		H2	H3	H4		H5	L1	⫧
				min.	max.			min.	max.			
M5	4	9.8	10.2	35.2	38.3	2.9	6.7	32.3	35.4	23.9	10.5	8
	6	9.8	12.6	35.2	38.3	2.9	6.7	32.3	35.4	26	12.2	8
R1/8	4	14.4	10.2	43.7	48.2	8	10.9	39.7	44.2	28.9	13	10
	6	14.4	12.6	43.7	48.2	8	10.9	39.7	44.2	31	14.2	10
	8	14.4	14.6	43.7	48.2	8	10.9	39.7	44.2	32.4	15.2	10
R1/4	6	18.4	12.6	47.8	52.3	11.1	12	41.8	46.2	32.1	17.2	14
	8	18.4	14.6	47.8	52.3	11.1	12	41.8	46.2	33.6	18.2	14
	10	18.4	17.8	47.8	52.3	11.1	12	41.8	46.2	35.9	19.8	14
R3/8	8	22	14.6	54.5	59	13.2	15.4	48.2	52.6	37.8	19.2	19
	10	22	17.8	54.5	59	13.2	15.4	48.2	52.6	40.1	20.8	19
	12	22	21.2	54.5	59	13.2	15.4	48.2	52.6	42.8	22.5	24
R1/2	12	28	21.2	59.8	64.3	16	18.2	51.6	56.1	47	25.5	24

Data sheet

Dimensions – LRLL, outlet at the side

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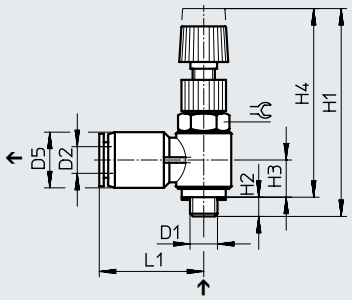
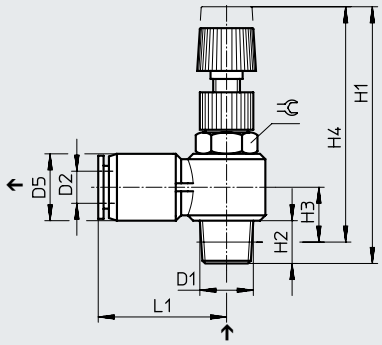
Pneumatic connection 1: M5



Pneumatic connection 1: R1/8, R1/4, R3/8, R1/2



↑ Flow direction with pressure reduction

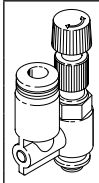
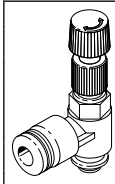
Note

Pressure applied at the push-in connector D2 can be exhausted with no change in pressure at the threaded connection D1 thanks to an integrated check valve.

Pneumatic connection 1 D1	D2 ⌀	D5 ⌀	H1		H2	H3	H4		L1	⌀
			min.	max.			min.	max.		
M5	4	9.9	35.2	38.3	3	7.1	32.2	35.3	19.9	8
	6	12.4	35.2	38.3	3	8.3	32.2	35.3	24	8
R1/8	4	10	43.7	48.2	8	10.7	39.7	44.2	21.4	10
	6	12.4	43.7	48.2	8	10.7	39.7	44.2	23.5	10
	8	14.4	43.7	48.2	8	11.9	39.7	44.2	26.9	10
R1/4	6	12.4	48	52.5	11.1	12.2	42	46.4	25.5	14
	8	14.4	48	52.5	11.1	13.2	42	46.4	28.4	14
	10	17.6	48	52.5	11.1	14.8	42	46.4	30.9	14
R3/8	8	14.5	54.2	59.2	13.2	15.4	47.9	52.8	28.9	19
	10	17.6	54.2	59.2	13.2	16.7	47.9	52.8	31.2	19
	12	21	54.2	59.2	13.2	18.4	47.9	52.8	36.9	19
R1/2	12	21	59.8	64.5	16	19.7	51.6	56.3	36.4	24

Data sheet

Ordering data

	Pneumatic connection		Standard nominal flow rate [l/min]		Weight [g]	Part no.	Type
	1	2	Open	Closed			
Outlet on top							
	M5	QS-4	30	30	9.5	**153510**	**LRL-M5-QS-4**
		QS-6	30	30	11	**153512**	**LRL-M5-QS-6**
	R1/8	QS-4	96	93	21	**153511**	**LRL-1/8-QS-4**
		QS-6	115	115	22	**153513**	**LRL-1/8-QS-6**
		QS-8	120	115	23	**153515**	**LRL-1/8-QS-8**
	R1/4	QS-6	241	240	38	**153514**	**LRL-1/4-QS-6**
		QS-8	224	224	39	**153516**	**LRL-1/4-QS-8**
		QS-10	231	231	43	**153518**	**LRL-1/4-QS-10**
	R3/8	QS-8	463	393	70	**153517**	**LRL-3/8-QS-8**
		QS-10	476	423	74	**153519**	**LRL-3/8-QS-10**
		QS-12	438	379	78	**153520**	**LRL-3/8-QS-12**
	R1/2	QS-12	760	730	110	**153521**	**LRL-1/2-QS-12**
Outlet on the side							
	M5	QS-4	30	30	9	**153498**	**LRLL-M5-QS-4**
		QS-6	32	31	10	**153500**	**LRLL-M5-QS-6**
	R1/8	QS-4	100	96	19	**153499**	**LRLL-1/8-QS-4**
		QS-6	155	140	20	**153501**	**LRLL-1/8-QS-6**
		QS-8	115	110	22	**153503**	**LRLL-1/8-QS-8**
	R1/4	QS-6	267	266	37	**153502**	**LRLL-1/4-QS-6**
		QS-8	268	264	38	**153504**	**LRLL-1/4-QS-8**
		QS-10	269	262	42	**153506**	**LRLL-1/4-QS-10**
	R3/8	QS-8	474	340	67	**153505**	**LRLL-3/8-QS-8**
		QS-10	456	411	69	**153507**	**LRLL-3/8-QS-10**
		QS-12	518	423	73	**153508**	**LRLL-3/8-QS-12**
	R1/2	QS-12	730	700	105	**153509**	**LRLL-1/2-QS-12**