

Products

95L Series Pressure Reducing Regulators

Introduction

B The 95L Series regulators are compact, rugged, direct-operated, low-pressure regulators for outlet pressures of 2 to 30 psig (0,14 to 2,1 bar). The units are available in 1/4 through 1-inch (DN 8 through 25) sizes and are offered in several different end connection styles. The Type 95L is designed to handle inlet pressures up to 300 psig (20,7 bar) and temperatures up to 450°F (232°C).

The Type 95LD low-pressure regulator uses spring force to maintain a pressure differential between the spring case loading pressure and regulator outlet pressure.

Body Sizes and End Connection Styles

See Table 2

Pressure Registration

Type 95L: Internal
Type 95LD: Internal with outside pressure source for differential pressure or pressure loading

Features

- Versatility
- Easy In-Line Maintenance
- Differential Pressure Capability
- Rugged Construction

Maximum Inlet Pressure

300 psig (20,7 bar)
 See Table 5

Maximum Outlet (Casing) Pressure

See Table 5

Outlet and Differential Pressure Range

2 to 30 psig (0,14 to 2,1 bar) in three ranges
 See Table 7

Flow Coefficients

See Table 6

Maximum Temperature Capabilities

Metal Diaphragm and Seat (Standard):
 Cast Iron Body: 406°F (208°C)
 Stainless Steel/Steel Body: 450°F (232°C)

Additional Technical Data

For more technical information contact your Fisher Sales Representative, refer to Bulletin 71.1:95, or order your Fisher Regulator CD using the card in the back of this handbook.



Figure 1. Type 95L Pressure Reducing Regulator



Figure 2. Type 95LD Differential Pressure Reducing Regulator

Table 1. Available Configurations	
TYPE	CONFIGURATION
95L	For outlet pressures from 2 to 30 psig (0,14 to 2,1 bar)
95LD	Differential regulator for 2 to 30 psig (0,14 to 2,1 bar) differential pressures with handwheel and packing box

Table 2. Body Sizes and End Connection Styles		
BODY SIZE, INCHES (DN)	END CONNECTION STYLE	
	Cast Iron Body	Steel or Stainless Steel Body
1/4 (8)	NPT Screwed	NPT Screwed
1/2 (15), 3/4 (20), 1 (25)	NPT Screwed	NPT Screwed, 150 RF, 300 RF, or PN 16/25/40

Table 3. Construction Materials				
BODY	SPRING CASE	REGULATOR SPRING	VALVE SPRING	TRIM MATERIALS
Cast iron, WCC Steel, or CF8M Stainless steel	Cast iron, WCB Steel, or CF8M Stainless steel	Zinc-plated steel	S30200 Stainless steel (standard) or Inconel	See Table 4

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Table 4. Trim Materials	
PART NAME	METAL SEAT
Diaphragm	S30200 Stainless steel
Valve Plug Guide	S41600 Stainless steel or S31600 Stainless steel
Valve Plug (Metal Seat)	S41600 Stainless steel or S31600 Stainless steel
Orifice	S41600 Stainless steel or S31600 Stainless steel
Stem Assembly	S41600 Stainless steel or S31600 Stainless steel

Table 5. Maximum Pressures and Temperatures				
MAXIMUM INLET PRESSURE, PSIG (BAR)	MAXIMUM TEMPERATURE	MAXIMUM OUTLET PRESSURE, PSIG (BAR)	END CONNECTION STYLE	BODY MATERIAL
250 (17,2)	406°F (208°C)	50 (3,4)	NPT	Cast iron
285 (19,6)	450°F (232°C)	125 (8,6)	150 RF	WCC Steel
300 (20,7)		125 (8,6)	NPT or 300 RF	
275 (18,9)		125 (8,6)	150 RF	CF8M Stainless steel
300 (20,7)		125 (8,6)	NPT or 300 RF	

Table 6. Flow Coefficients ⁽¹⁾			
BODY SIZE, INCHES (DN)	WIDE-OPEN COEFFICIENTS (FOR RELIEF SIZING)		C ₁
	C _s	C _v	
1/4 (8)	1.40	0.8	35
1/2 (15)	3.35	1.9	35
3/4 (20), 1 (25)	7.80	4.4	35

1. C_v = C_s x 20 ÷ C₁

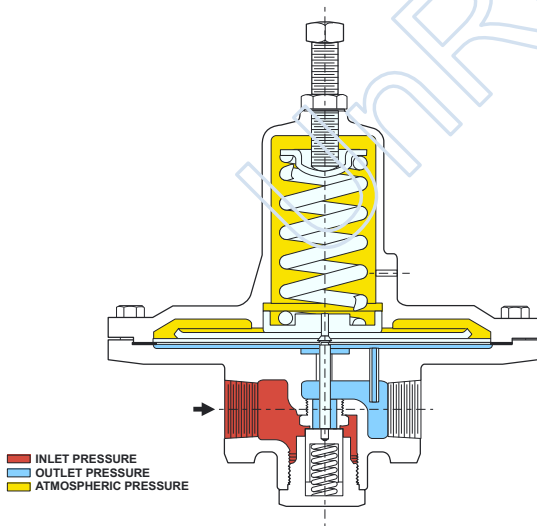
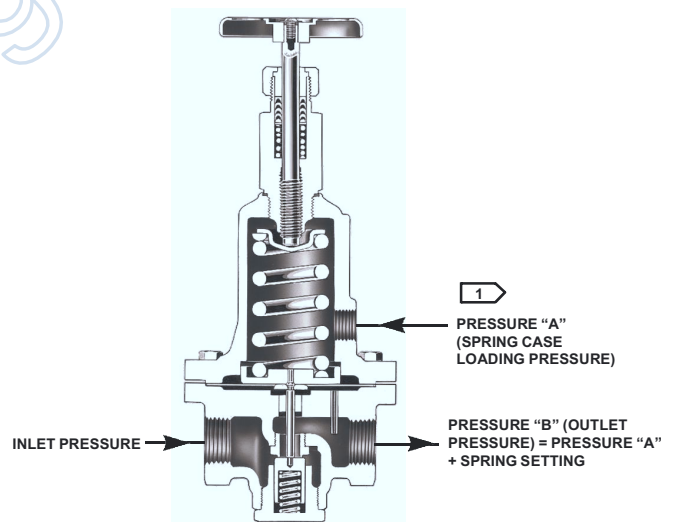


Figure 3. Type 95L with Metal Seat Operational Schematic



NOTE:
 1 PRESSURE "A" MAY BE SUPPLIED FROM ANOTHER PRESSURE SYSTEM OR A MANUAL LOADING REGULATOR

Figure 4. Type 95HD with Metal Seat Sectional View

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Table 7. Outlet or Differential Pressure Ranges				
TYPE NUMBER	BODY SIZE, INCHES (DN)	OUTLET OR DIFFERENTIAL PRESSURE RANGE ⁽¹⁾ , PSIG (BAR)	SPRING WIRE DIAMETER, INCHES (mm)	SPRING PART NUMBER AND COLOR
95L and 95LD	1/4 (8)	2 to 6 (0,14 to 0,4)	0.148 (3,76)	1E392527022 Yellow
		5 to 15 (0,34 to 1,0)	0.172 (4,37)	1E392627012 Green
		13 to 30 (0,9 to 2,1)	0.207 (5,26)	1E392727142 Red
	1/2 (15)	2 to 6 (0,14 to 0,4)	0.281 (7,13)	1E395627022 Yellow
		5 to 15 (0,34 to 1,0)	0.234 (5,94)	1D745527142 Green
		13 to 30 (0,9 to 2,1)	0.281 (7,13)	1E395727192 Red
3/4 (20), 1 (25)	2 to 6 (0,14 to 0,4)	0.306 (7,77)	1E398927022 Yellow	
	5 to 15 (0,34 to 1,0)	0.343 (8,71)	1E399027142 Green	
	13 to 30 (0,9 to 2,1)	0.406 (10,3)	1E399127162 Red	

1. Pressure ranges given for Type 95L regulators indicate actual outlet pressure. For Type 95LD regulators, the pressure ranges indicate the differential pressure that can be obtained with the indicated spring. The differential pressure (spring setting) is added to the spring case loading pressure to determine the actual outlet pressure.

Table 8. Capacities										
OUTLET PRESSURE RANGE, PSIG (BAR)	OUTLET PRESSURE SETTING, PSIG (BAR)	INLET PRESSURE, PSIG (BAR)	CAPACITIES IN POUNDS PER HOUR (KG/H) OF SATURATED STEAM							
			Regulator Body Size, inches							
			1/4 (8)		1/2 (15)		3/4 (20)		1 (25)	
			10% Droop	20% Droop	10% Droop	20% Droop	10% Droop	20% Droop	10% Droop	20% Droop
2 to 6 (0,14 to 0,4)	2 (0,14)	10 (0,69)	6.0 (2,72)	11 (4,99)	12 (5,44)	16 (7,26)	27 (12,2)	48 (21,8)	32 (14,5)	56 (25,4)
		50 (3,4)	10 (4,54)	15 (6,80)	14 (6,35)	21 (9,52)	60 (27,2)	120 (54,4)	68 (30,8)	140 (63,5)
		100 (6,9)	10 (4,54)	15 (6,80)	14 (6,35)	21 (9,52)	100 (45,4)	170 (77,1)	120 (54,4)	200 (90,7)
		200 (13,8)	11 (4,99)	16 (7,26)	16 (7,26)	22 (9,98)	100 (45,4)	190 (86,2)	120 (54,4)	220 (99,8)
		250 (17,2)	13 (5,90)	17 (7,71)	18 (8,16)	24 (10,9)	100 (45,4)	190 (86,2)	120 (54,4)	220 (99,8)
	5 (0,34)	10 (0,69)	8.0 (3,63)	15 (6,80)	16 (7,26)	24 (10,9)	44 (20,0)	68 (30,8)	52 (23,6)	80 (36,3)
20 (1,4)	12 (5,44)	21 (9,52)	20 (9,07)	30 (13,6)	30 (13,6)	76 (34,5)	140 (63,5)	88 (39,9)	160 (72,6)	
50 (3,4)	18 (8,16)	24 (10,9)	24 (10,9)	34 (15,4)	140 (63,5)	220 (99,8)	170 (77,1)	260 (118)	340 (154)	
100 (6,9)	20 (9,07)	25 (11,3)	28 (12,7)	36 (16,3)	170 (77,1)	290 (132)	200 (90,7)	340 (154)	400 (181)	
200 (13,8)	20 (9,07)	25 (11,3)	29 (12,7)	36 (16,3)	170 (77,1)	330 (150)	200 (90,7)	390 (177)	400 (181)	
250 (17,2)	20 (9,07)	25 (11,3)	28 (12,7)	36 (16,3)	170 (77,1)	330 (150)	200 (90,7)	400 (181)	400 (181)	
5 to 15 (0,34 to 1,0)	10 (0,69)	20 (1,4)	20 (9,07)	27 (12,2)	30 (13,6)	44 (20,0)	68 (30,8)	100 (45,4)	80 (36,3)	120 (54,4)
		50 (3,4)	30 (13,6)	37 (16,8)	40 (18,1)	56 (25,4)	110 (49,9)	210 (95,2)	130 (59,0)	250 (113)
		100 (6,9)	30 (13,6)	40 (18,1)	40 (18,1)	56 (25,4)	260 (118)	370 (168)	300 (136)	440 (200)
		200 (13,8)	30 (13,6)	40 (18,1)	40 (18,1)	56 (25,4)	340 (154)	520 (236)	400 (181)	600 (272)
		250 (17,2)	30 (13,6)	40 (18,1)	40 (18,1)	56 (25,4)	340 (154)	520 (236)	400 (181)	600 (272)
	15 (1,0)	20 (1,4)	18 (8,16)	28 (12,7)	32 (14,5)	48 (21,8)	76 (34,5)	110 (49,9)	88 (39,9)	130 (59,0)
50 (3,4)	36 (16,3)	48 (21,8)	52 (23,6)	64 (29,0)	64 (29,0)	200 (90,7)	290 (132)	240 (109)	340 (154)	
100 (6,9)	40 (18,1)	52 (23,6)	56 (25,4)	72 (32,7)	72 (32,7)	340 (154)	520 (236)	400 (181)	600 (272)	
200 (13,8)	40 (18,1)	52 (23,6)	56 (25,4)	72 (32,7)	72 (32,7)	440 (200)	600 (272)	520 (236)	720 (327)	
250 (17,2)	40 (18,1)	52 (23,6)	56 (25,4)	72 (32,7)	72 (32,7)	440 (200)	600 (272)	520 (236)	720 (327)	
13 to 30 (0,9 to 2,1)	20 (1,4)	30 (2,1)	22 (9,98)	34 (15,4)	44 (20,0)	60 (27,2)	100 (45,4)	100 (45,4)	120 (54,4)	180 (81,6)
		50 (3,4)	36 (16,3)	52 (23,6)	56 (25,4)	72 (32,7)	180 (81,6)	180 (81,6)	220 (99,8)	320 (145)
		100 (6,9)	44 (20,0)	60 (27,2)	64 (29,0)	84 (38,1)	320 (145)	320 (145)	380 (172)	600 (272)
		200 (13,8)	44 (20,0)	60 (27,2)	64 (29,0)	84 (38,1)	520 (236)	520 (236)	600 (272)	800 (363)
		250 (17,2)	44 (20,0)	60 (27,2)	64 (29,0)	84 (38,1)	520 (236)	520 (236)	600 (272)	800 (363)
	30 (2,1)	40 (2,8)	36 (16,3)	48 (21,8)	72 (32,7)	96 (43,5)	140 (63,5)	200 (90,7)	160 (72,6)	240 (109)
50 (3,4)	48 (21,8)	60 (27,2)	80 (36,3)	80 (36,3)	110 (49,9)	170 (77,1)	260 (118)	200 (90,7)	300 (136)	
100 (6,9)	72 (32,7)	100 (45,4)	96 (43,5)	140 (63,5)	140 (63,5)	340 (154)	520 (236)	400 (181)	600 (272)	
200 (13,8)	76 (34,5)	100 (45,4)	100 (45,4)	140 (63,5)	140 (63,5)	560 (254)	880 (399)	680 (308)	1000 (454)	
250 (17,2)	76 (34,5)	100 (45,4)	100 (45,4)	140 (63,5)	140 (63,5)	560 (254)	880 (399)	680 (308)	1000 (454)	