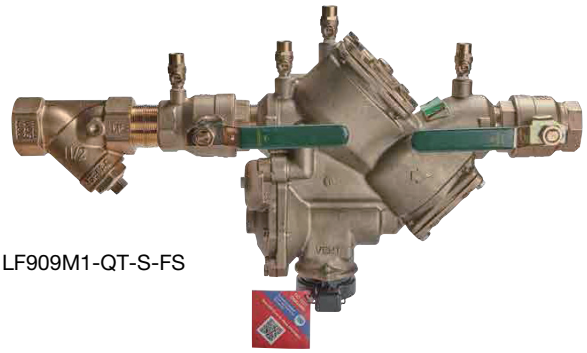
Series LF909-FS Small

Reduced Pressure Zone Assemblies
LF909-FS

LF909-FS
¾"–1"

LF909M1-FS
1¼"–2"



LF909M1-QT-S-FS

Series LF909-FS Reduced Pressure Zone Assemblies are designed to provide superior cross-connection control protection of the potable water supply in accordance with national plumbing codes and containment control for water authority requirements. This series can be utilized in a variety of installations, including health hazard cross-connections in plumbing systems or for containment at the service line entrance. The series features Lead Free* construction to comply with Lead Free* installation requirements. With its exclusive design incorporating the "air-in/water-out" principle, the series provides maximum relief valve discharge during the emergency conditions of combined backsiphonage and backpressure with both checks fouled. Model LF909-FS-QT is standardly furnished with full port, resilient-seated, and Lead Free* cast copper silicon alloy ball valve shutoffs. Sizes 3/4" and 1" shutoffs have tee handles.
This series includes an integrated flood sensor to detect excessive water discharges from the relief valve. The sensor relays a signal that triggers notification to facility personnel, helping to avoid the possibility of ruinous flooding and costly damage.

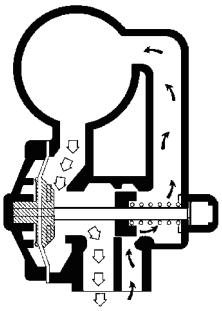
Features

- Modular design
- Replaceable seats
- Compact for installation ease
- Horizontal or vertical (up or down) installation on limited sizes only
- No special tools required for servicing
- Integrated sensor for flood detection
- Flood alert feature activated with add-on sensor connection kit, compatible with BMS and cellular communication

Specification

A Reduced Pressure Zone Assembly shall be installed at each cross-connection to prevent backsiphonage and backpressure of hazardous materials into the potable water supply. The assembly shall consist of a pressure differential relief valve located in a zone between two positive seating check valves. Backsiphonage protection shall include provision to admit air directly into the reduced pressure zone via a separate channel from the water discharge channel, or directly into the supply pipe via a separate vent. The assembly shall be constructed using Lead Free* cast copper silicon materials. The Lead Free* reduced pressure zone assembly shall comply with state codes and standards, where applicable, requiring reduced lead content. The assembly shall include two tightly closing shutoff valves before and after the assembly, test cocks and a protective strainer upstream of the No. 1 shutoff valve. The assembly (specify Model LF909 for temperatures up to 140°F (60°C)) shall meet the requirements of ASSE Standard 1013; AWWA Standard C-511-92 CSA B64.4; FCCCHR of USC Manual Section 10. Listed by IAPMO (UPC). SBCCI (Standard Plumbing code). The assembly shall be a Watts LF909QT, and shall include strainer (-S) and integrated sensor for flood detection (-FS).

How It Operates
The unique relief valve construction incorporates two channels: one for air, the other for water. When the relief valve opens the right channel admits air to the top of the reduced pressure zone, relieving the zone vacuum. The left channel then drains the zone to atmosphere. (See diagram to the right.) Therefore, if both check valves foul, and simultaneous negative supply and positive backpressure develop, the relief valve uses the air-in/water-out principle to stop potential backflow.



Standards

- AWWA C-511-92
- FCCCHR of USC Manual Section 10
- IAPMO (UPC), SBCCI (Standard Plumbing code)
- Tested and Certified by NSF International

Approvals

Listed by IAPMO
Listed by SBCCI
Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California (QT and S models)
Vertical "flow-up" approval only on 3/4" and 1" sizes (Model LF909QT)

Pressure-Temperature

- Temperature Range: 33°F – 140°F (0.5°C – 60°C) continuous; 180°F (82°C) intermittent
- Maximum Working Pressure: 175 psi (12.1 bar)

Material

Component	Material
Body	Lead Free* Cast Copper Silicon Alloy
Check Seats	909 Celcon®
Relief Valve Seats	Stainless Steel 909
Test Cocks	Lead Free* Cast Copper Silicon Alloy

Model/Option

FS Integrated sensor for flood detection
QT Quarter-turn ball valves
S Bronze strainer

Connections

- ¾" – 1" 909-NPT Female threaded body connection
- 1¼" – 2" 909-M1-NPT Male threaded body connection

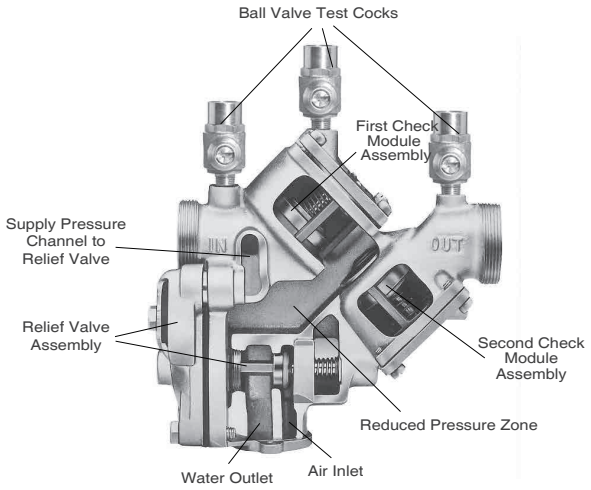
Insulated Enclosure

The WattsBox insulated enclosure is available for this series. For more information download ES-WB at watts.com.

Installation Dimensions

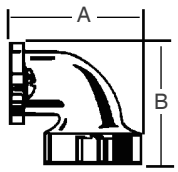
Dimensions — Weights

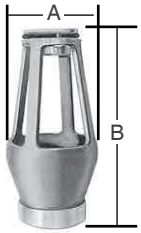
When installing a drain line, use Model 909AG air gaps on Series LF909 Small back flow preventers. Model 909EL elbows are for air gaps on backflow preventers in vertical installations.

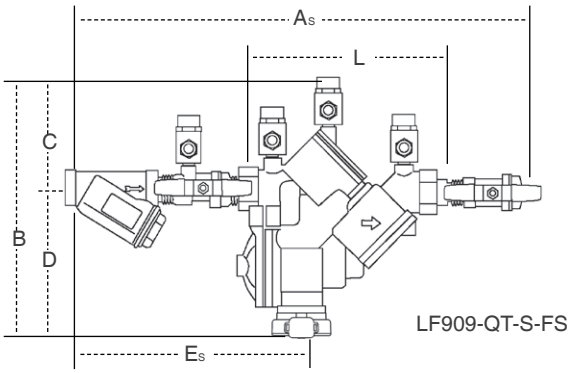


Model 909AG Air Gaps

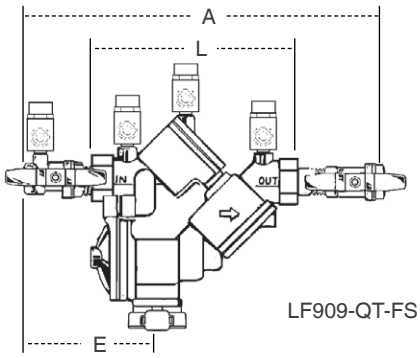
		909 DRAIN		OUTLET		DIMENSIONS				WEIGHT	
Iron Body No.	Desc.	Size in.	Size mm	Size in.	Size mm	A in.	A mm	B in.	B mm	lb	kg
909AG-C	Air Gap	¾,1	19,25	1	25	3¼	83	4⅞	124	1½	.7
909EL-C	Elbow	¾,1	19,25	–	–	2⅜	60	2⅜	60	⅜	.2
909AG-F	Air Gap	1¼-2	32-50	2	50	4⅜	111	6¾	171	3¾	1.5
909EL-F	Elbow	1¼-2	32-50	–	–	3⅝	92	3⅝	92	2	.9



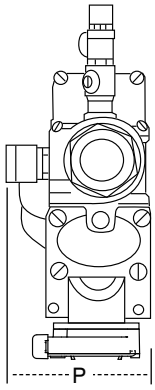




LF909-QT-S-FS



LF909-QT-FS



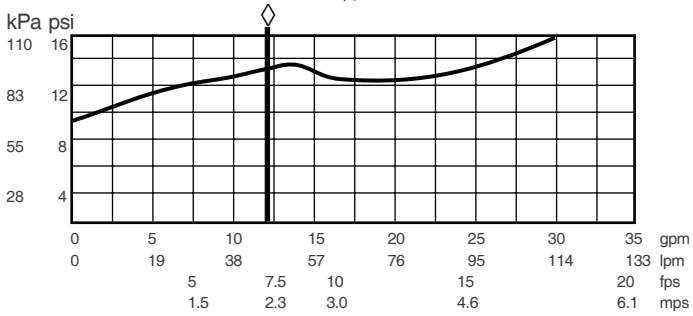
LF909, LF909M1

SIZE (DN)	DIMENSIONS									WEIGHT			
	A in.	As in.	B in.	C in.	D in.	E in.	Es in.	L in.	P in.	QT lb	QT kg	QT-S lb	QT-S kg
¾"	14⅜	18 1/16	9⅞	4	5⅞	6¾	10 9/16	7 5/16	3⅞	14	6.4	15.6	7.1
1"	15⅜	19 5/8	9⅞	4	5⅞	7	11	7 5/16	3⅞	15	6.8	17.5	7.9
1¼"M1	18½	23 7/16	12¾	5½	7⅝	7½	12 3/16	10⅜	5¼	40	18.1	42.8	19.4
1½"M1	19	24 ⅜	12¾	5½	7⅝	7½	12⅝	10⅜	5¼	40	18.1	44.0	20.0
2"M1	19½	25 5/16	12¾	5½	7⅝	7¾	13 5/16	10⅜	5¼	40	18.1	47.4	21.5

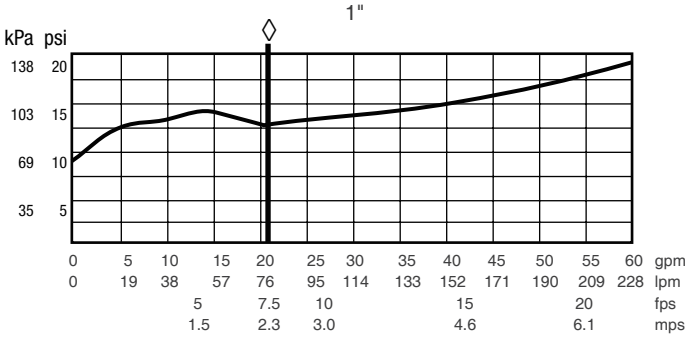
Characteristic Curves

As compiled from documented Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California lab tests.
◊Typical maximum system flow rate (7.5 ft/s)

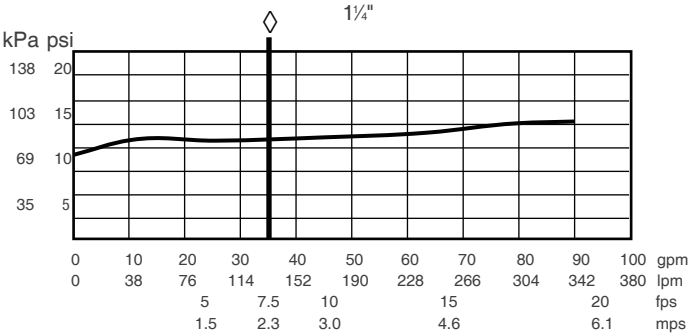
¾"



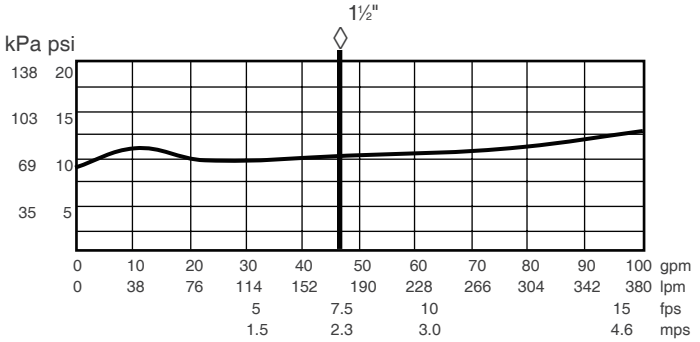
1"



1¼"



1½"



2"