

## Engineering Specification

Job Name \_\_\_\_\_  
 Job Location \_\_\_\_\_  
 Engineer \_\_\_\_\_  
 Approval \_\_\_\_\_

Contractor \_\_\_\_\_  
 Approval \_\_\_\_\_  
 Contractor's P.O. No. \_\_\_\_\_  
 Representative \_\_\_\_\_

# LEAD FREE\*

## Series LF909-FS Small Reduced Pressure Zone Assemblies LF909-FS

3/4"–1"

### LF909M1-FS

1 1/4"–2"

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.

#### NOTICE

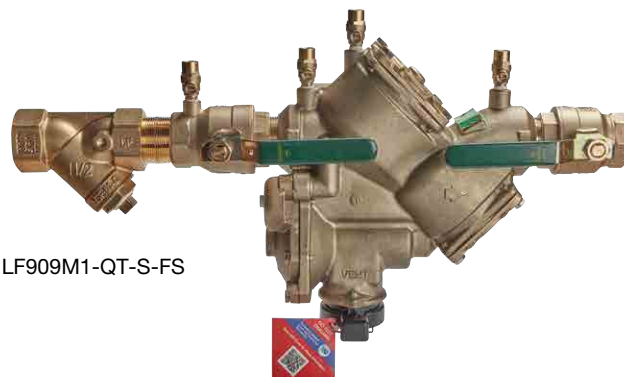
An add-on connection kit is required to activate the integrated flood sensor. Without the connection kit, the flood sensor is a passive component and will not communicate with any other device. (For more information, download RP-IS-LF909S-FS.)

#### 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

\*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

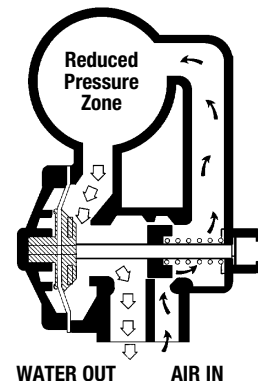
Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.



LF909M1-QT-S-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.



#### NOTICE

Use of the integrated flood sensor does not replicate the need to comply with all required instructions, codes, and regulations related to installation, operation, and maintenance of this product, including the need to provide proper drainage in the event of a discharge.

Watts® is not responsible for the failure of alerts due to connectivity or power issues.

#### NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Inquire with governing authorities for local installation requirements.

## 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).

## Model/Option

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

### NOTICE

The installation of a drain line is recommended. When installing a drain line, an air gap is necessary.

## Materials

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

## 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 ¾" 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)

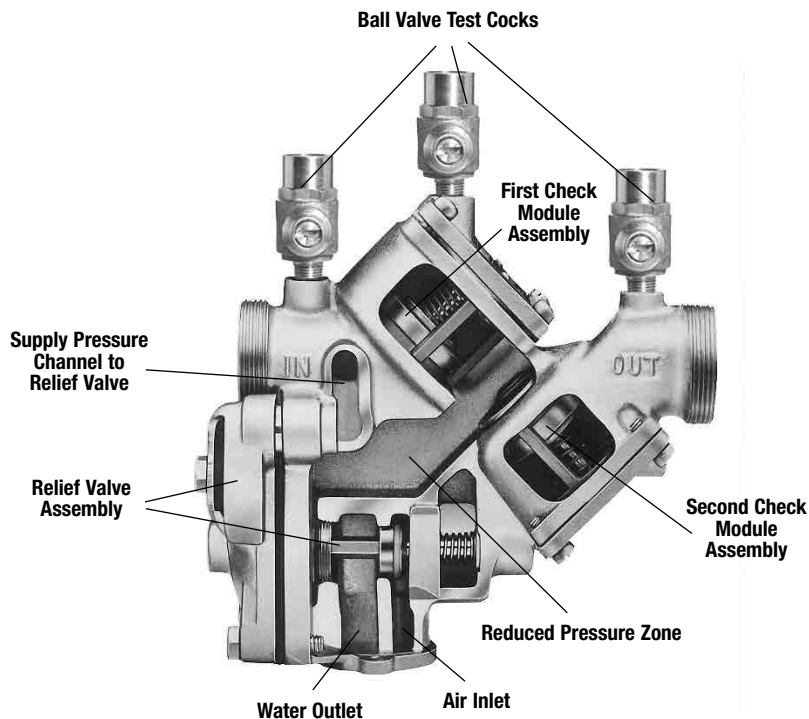
## Connections

¾" – 1" 909-NPT Female threaded body connection

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

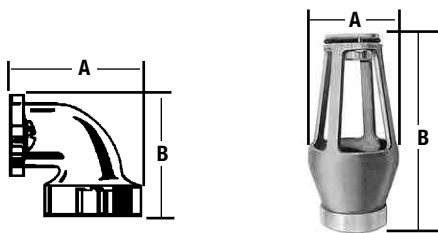
## Insulated Enclosure

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



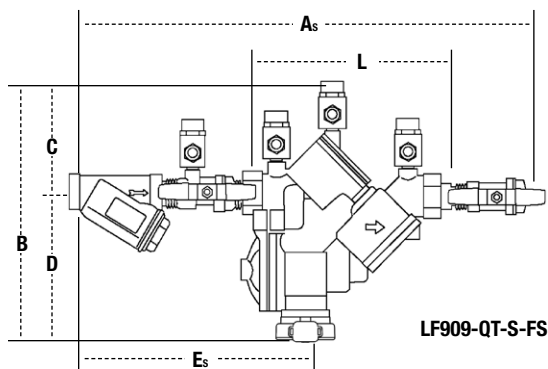
## Dimensions – Weights

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

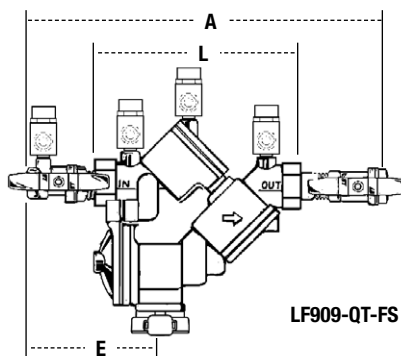


### Model 909AG Air Gaps

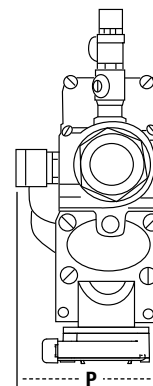
| Iron Body No. | Desc.   | 909 DRAIN |        | OUTLET   |    | DIMENSIONS |     |    |     | WEIGHT |     |
|---------------|---------|-----------|--------|----------|----|------------|-----|----|-----|--------|-----|
|               |         | Size in.  | mm     | Size in. | mm | A          |     | B  |     | lb     | kg  |
| 909AG-C       | Air Gap | ¾, 1      | 19, 25 | 1        | 25 | ¾          | 83  | ¾  | 124 | 1½     | .7  |
| 909EL-C       | Elbow   | ¾, 1      | 19, 25 | –        | –  | 2%         | 60  | 2% | 60  | ¾      | .2  |
| 909AG-F       | Air Gap | 1¼-2      | 32-50  | 2        | 50 | 4%         | 111 | 6% | 171 | 3¼     | 1.5 |
| 909EL-F       | Elbow   | 1¼-2      | 32-50  | –        | –  | 3%         | 92  | 3% | 92  | 2      | .9  |



LF909-QT-S-FS



LF909-QT-FS



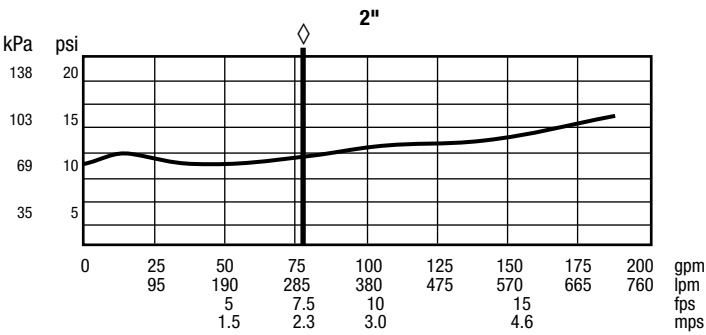
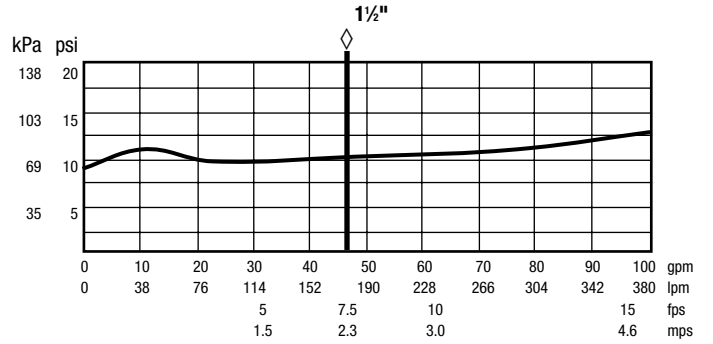
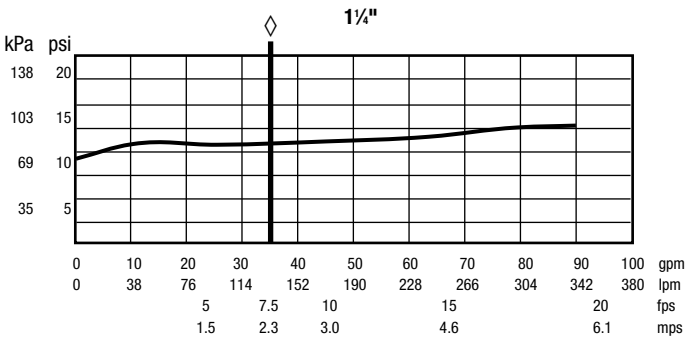
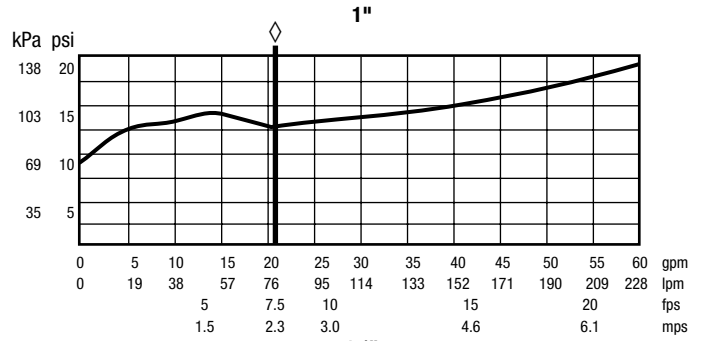
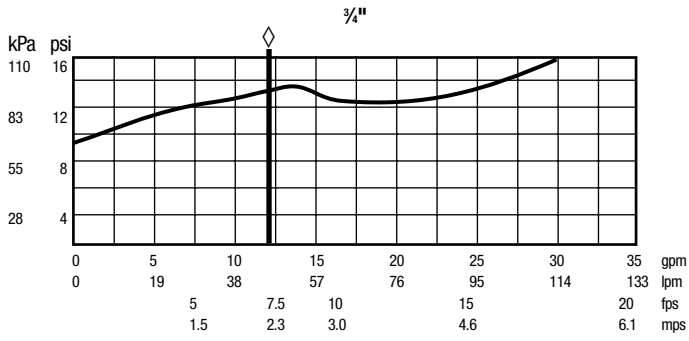
### LF909, LF909M1

| SIZE (DN) | DIMENSIONS |     |                                  |     |     |     |     |     |     |     |     |     | WEIGHT                           |     |                                |     |     |     |    |      |      |      |
|-----------|------------|-----|----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------------------------|-----|--------------------------------|-----|-----|-----|----|------|------|------|
|           | A          |     | As                               |     | B   |     | C   |     | D   |     | E   |     | Es                               |     | L                              |     | P   |     | QT |      | QT-S |      |
|           | in.        | mm  | in.                              | mm  | in. | mm  | in. | mm  | in. | mm  | in. | mm  | in.                              | mm  | in.                            | mm  | in. | mm  | lb | kg   | lb   | kg   |
| ¾"        | 14%        | 365 | 18 <sup>1</sup> / <sub>16</sub>  | 459 | 9%  | 251 | 4   | 102 | 5%  | 149 | 6%  | 171 | 10 <sup>1</sup> / <sub>16</sub>  | 259 | 7 <sup>1</sup> / <sub>16</sub> | 186 | 3%  | 98  | 14 | 6.4  | 15.6 | 7.1  |
| 1"        | 15%        | 391 | 19%                              | 498 | 9%  | 251 | 4   | 102 | 5%  | 149 | 7   | 178 | 11                               | 279 | 7 <sup>1</sup> / <sub>16</sub> | 186 | 3%  | 98  | 15 | 6.8  | 17.5 | 7.9  |
| 1¼"M1     | 18%        | 470 | 23 <sup>7</sup> / <sub>16</sub>  | 595 | 12% | 324 | 5½  | 140 | 7%  | 194 | 7½  | 191 | 12 <sup>3</sup> / <sub>16</sub>  | 310 | 10%                            | 264 | 5¼  | 133 | 40 | 18.1 | 42.8 | 19.4 |
| 1½"M1     | 19         | 483 | 24%                              | 619 | 12% | 324 | 5½  | 140 | 7%  | 194 | 7½  | 191 | 12%                              | 321 | 10%                            | 264 | 5¼  | 133 | 40 | 18.1 | 44.0 | 20.0 |
| 2"M1      | 19½        | 495 | 25 <sup>15</sup> / <sub>16</sub> | 659 | 12% | 324 | 5½  | 140 | 7%  | 194 | 7¾  | 197 | 13 <sup>15</sup> / <sub>16</sub> | 354 | 10%                            | 264 | 5¼  | 133 | 40 | 18.1 | 47.4 | 21.5 |

# Capacity

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)



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