

# Series 957 with Flood Sensor

957-FS Reduced Pressure Zone Assemblies

957RPDA-FS Reduced Pressure Detector Assemblies



# Superior Backflow Protection from Watts®

When it comes to protecting the health and safety of people, why choose anything but the best? Series 957 SilverEagle® backflow prevention assemblies incorporate the latest design features to protect against contamination at health hazard cross-connections. The SilverEagle series consists of the most compact and lightest assemblies, each offering the most flexibility of any backflow assembly in the industry. Specify the valve with safety at its core!

## Features

- Available with quarter-turn ball valve shutoffs (2½" to 4")
- Most compact design in the industry
- Entire valve body and closure sleeve manufactured from 300 Series stainless steel
- Approved with gate valves or UL Classified and FM Approved butterfly valves
- Approved for horizontal, N-pattern, and Z-pattern installations
- Utilizes groove connections for ease of installation and pipe alignment
- Independent torsion spring check modules for ease of serviceability

Series 957-FS and 957RPDA-FS assemblies include an integrated flood sensor that detects excessive relief valve discharges and triggers an alert system to send notification of potential flood events. An add-on connection kit is required to implement sensor activation. The alert system can be used with building management systems or cellular communication networks. Existing installations can be upgraded with a retrofit connection kit.

- Compact design allows for use of small enclosures
- Replaceable check disc rubber
- Bottom-mounted cast stainless steel relief valve
- Integrated sensor for flood detection, activated by add-on connection kit

## Assembly Characteristics

### Lay Length

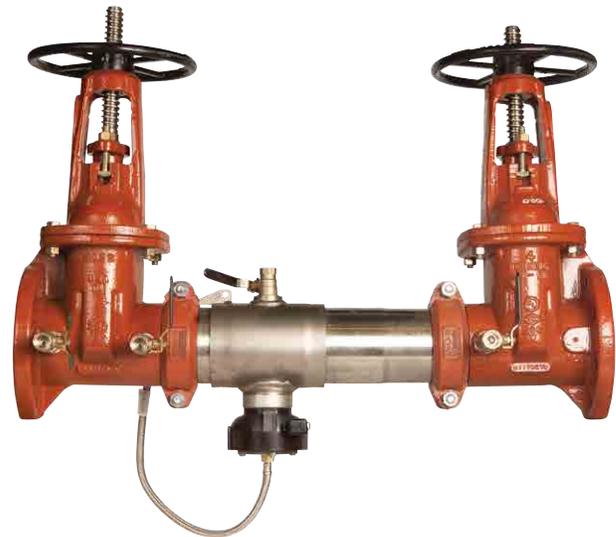
Compare 4" Reduced Pressure Assembly with Shutoff Valves

Backflow Assembly	Lay Length (in.)	% Longer Than Watts
Watts 957-FS	33.7	
Wilkins 375 w/OS&Y - BF 375	37.5	11%

### Assembly Weight

Compare 4" Reduced Pressure Assembly with Shutoff Valves

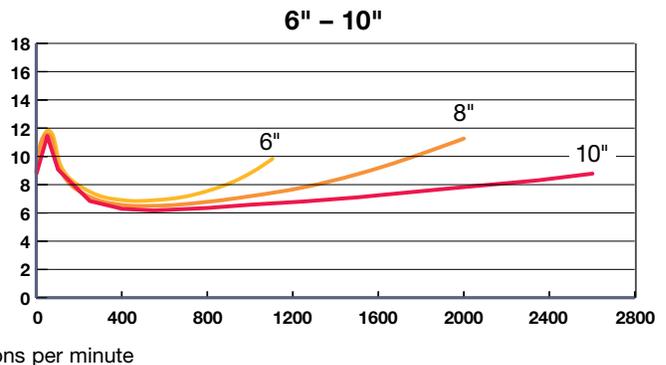
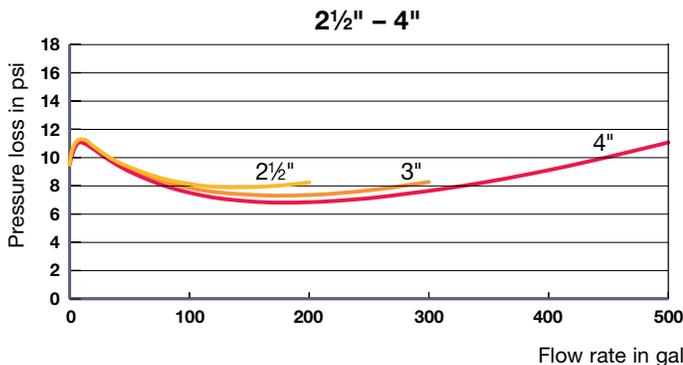
Backflow Assembly	Assembly Weight (lb)	% Heavier than Watts
Watts 957-FS	87	
Wilkins 375 w/OS&Y - BF 375	288	202%



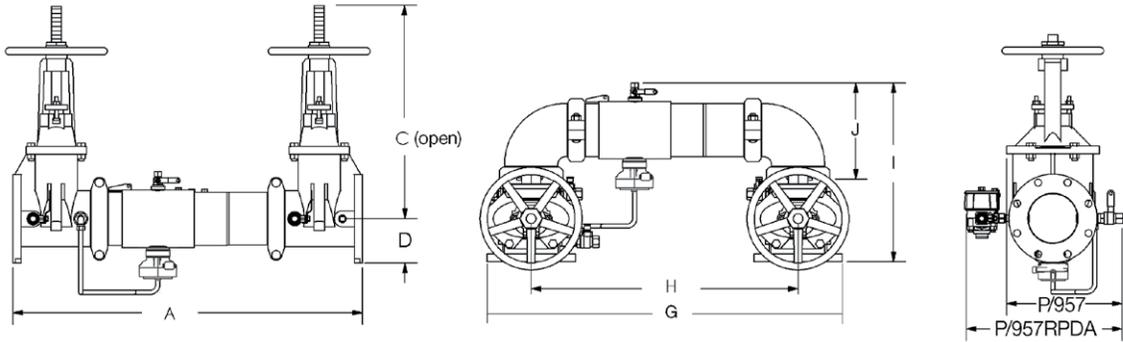
## Typical Flow Rates @ 15 FPS

Size	GMP	Size	GMP
2½"	224	6"	1350
3"	350	8"	2400
4"	500	10"	3700

## Certified Flow Characteristics



## Dimensions and Weight



### With Gate Valves

### With Butterfly Valves\*\*

Size	C		D	H	I	P		Weight* (lb)		G	H	I	J	P		Weight* (lb)	
	RPZ	RPDA	RPZ	RPZ	RPZ	RPZ	RPDA	RPZ	RPDA	RPZ	RPZ	RPZ	RPZ	RPZ	RPDA	RPZ	RPDA
2½"	31"	16⅞"	6½"	22"	15½"	9⅞"	13⅜"	128	142	32½"	23½"	15½"	9½"	11⅜"	15⅜"	67	81
3"	31⅛"	18⅞"	6⅛"	22¾"	17⅞"	10½"	14½"	148	162	34"	24½"	16⅞"	10⅛"	12⅞"	16⅞"	80	84
4"	33⅛"	22¾"	7"	24"	18½"	11⅞"	15⅞"	164	178	35⅞"	26"	17⅞"	10⅝"	12⅞"	16⅞"	87	101
6"	43½"	30⅞"	8½"	33¾"	23⅞"	15"	19"	298	312	46½"	35⅞"	20½"	13½"	15"	19"	160	174
8"	50"	37¾"	9⅞"	40⅞"	27⅞"	17⅞"	21⅞"	483	491								
10"	57½"	45¾"	11⅞"	50"	32½"	20"	24"	783	797								

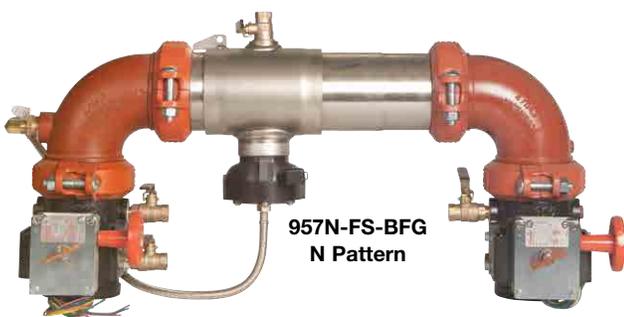
### With Quarter-Turn Ball Valves

Size	A	C	D	G	H	I	J	P	Weight* (lb)	
									QT	QTN
2½"	27½"	4⅞"	6⅞"	30¼"	21½"	16⅞"	11⅞"	11⅞"	46	57
3"	28"	4⅞"	6⅞"	30¼"	22¼"	16⅞"	11⅞"	11⅞"	56	67
4"	28¾"	4⅞"	6⅞"	30¼"	23½"	18⅞"	11⅞"	11⅞"	76	87

\*For N-pattern weights, refer to ES-957/957N/957Z-FS and ES-957RPDA/957NRPDA/957ZRPDA-FS at watts.com.

\*\*UL Classified and FM Approved

## Available with Butterfly Valves or Quarter-Turn Ball Valves

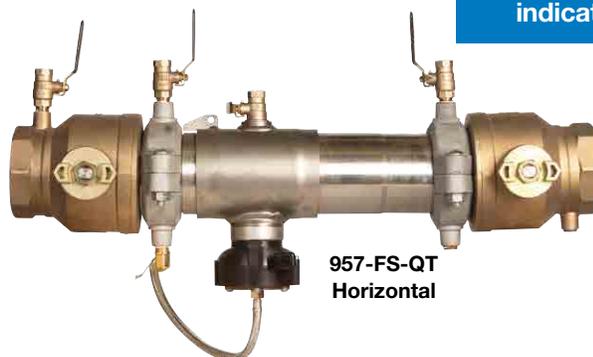


### Advantages of UL Classified & FM Approved Butterfly Valves

- Butterfly valves have built-in tamper switch wiring
- Backflow assembly is lighter and more compact
- Groove couplings ease installation and pipe alignment
- All butterfly valves display flow indicator flag

### Advantages of Quarter-Turn Ball Valves

- Positive drip tight closure
- Fast quarter-turn operation
- Available in sizes 2½" to 4"
- Available for N-pattern, Z-pattern, and horizontal installations
- Low operating torque



## Installation Guidelines

Most field problems occur because dirt or debris present in the system at the time of installation becomes trapped in the first check seating area, resulting in a low or zero differential across the first check. The system should be flushed before the backflow valve is installed. If the system is not flushed until after the backflow assembly is installed, remove both check modules from the valve and open the inlet shutoff to allow water to flow for a sufficient time to flush debris from the water line. If debris in the water system continues to cause fouling, a strainer should be installed ahead of the backflow preventer to protect all internal components from unnecessary fouling.

### ⚠ CAUTION

Do not install a strainer ahead of the backflow preventer on seldom-used, emergency water lines (that is, fire sprinkler lines). The strainer mesh could potentially become clogged with debris present in the water and cause water blockage during an emergency.

Series 957-FS and 957RPDA-FS can be installed in a horizontal, N pattern, or Z pattern as long as the backflow assembly is installed in accordance with the direction of the flow arrow on the assembly and the local water authority approves the installation.

Proper installation of the assembly allows adequate clearance around the valve for inspection, testing, and servicing. A minimum clearance of 12 inches is needed between the lower portion of the assembly and the floor or grade.

## Cutaway View — Full Flow Operation

### Normal Operation

In normal flowing operation the independent check valves are open and the pressure differential relief valve located between the two check valves is closed. The relief valve automatically opens and closes to maintain the zone pressure at least 2 psi lower than the inlet pressure. If flow stops and one of the check valves is fouled, the differential pressure relief valve automatically opens and discharges water to maintain the zone at a pressure of 2 psi lower than the inlet pressure.

### Applications

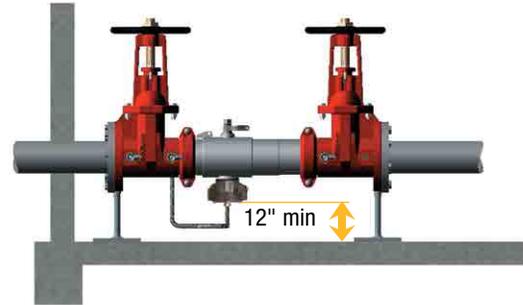
**Series 957-FS.** Pressure Zone Assemblies provide protection to the potable water system from contamination in accordance with national plumbing codes. These assemblies are used in health-hazard applications for protection against both backsiphonage and backpressure.

**Series 957RPDA-FS.** Pressure Detector Assemblies are installed on fire protection systems connected to the public water supply in a health-hazard application. Series 957RPDA-FS has the same features as Series 957-FS but is used to monitor unauthorized use of water from the fire protection system.

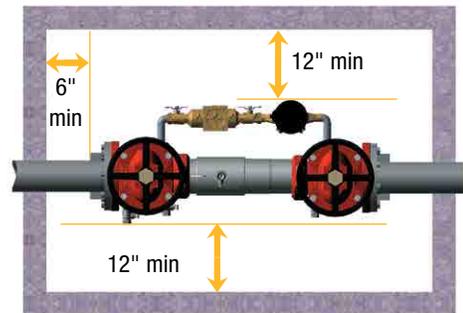
### Specification

The Reduced Pressure Zone Assembly shall consist of two independent torsion spring check modules, a differential pressure relief valve located between and below the two modules, drip tight inlet and outlet shutoff valves, and required test cocks. Both torsion spring check modules shall be contained within a sleeve housing constructed from 300 Series stainless steel. Torsion spring checks shall have reversible elastomer discs and in operation shall produce drip tight closure against reverse flow caused by backpressure or backsiphonage. Assembly shall be a Watts 957/957RPDA.

## Interior Installation



## Enclosure Installation



## Characteristics and Materials

### Rated Working Pressure

175 psi

### Temperature Range

33°F – 110°F

### Body Construction

300 Series stainless steel

### End Connections

Groove per AWWA C-606 (IPS) or Flange per ANSI B16.1, Class 125

Sizes 2½" to 4" available with threaded QT ball valve shutoffs (Series 957-FS)

