

Engineering Sheet

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

LEAD FREE*

PVS-7000

Engineered Flood Protection Valve Station with SentryPlus Alert™

Watts Smart Engineered Flood Protection Valve Station with SentryPlus Alert™ is a configured water flow control system that is assembled from proven, reliable components to meet exacting project application requirements. Watts IoT enabled Flood Protection Shutdown ACV coupled with an industry-leading Backflow Preventer helps protect against catastrophic property damage that can occur due to Relief Valve discharge and/or a blocked or overwhelmed floor drain. These drop-in valve stations are factory pre-assembled and tested, ensuring quality and flow performance for critical building demands.

The Series PVS-7000 features integral SentryPlus Alert™ technology to provide multi-channel alerts to notify you in real time if there is an issue so you can take appropriate action. Alerts can be a text, email, or phone call.

Standard Features

- Helps protect property by shutting off supply to the backflow preventer and/or alerting the user remotely in case of possible catastrophic flood condition.
- Avoid potentially costly losses arising from flooding and property damage, including higher insurance premiums and expensive mop up operations.
- Reduce the need for off-hour maintenance personnel, as the Smart system not only detects the failure but also takes preventive action of shutting down the line and alerting the end-user via email, phone, text message (or all three) remotely via the Sentry+ Alert™ system.
- Ideal for medium to large line sizes up to 10".
- UL/FM, ASSE, IAPMO, and USC certified or listed components as required for service

Functional Specifications

Operating Pressure: 175psig

Operating Temperature:

- 957 Backflow: 33°F – 140°F
- LF909 Backflow: 33°F-110°F continuous, up to 140°F intermittent

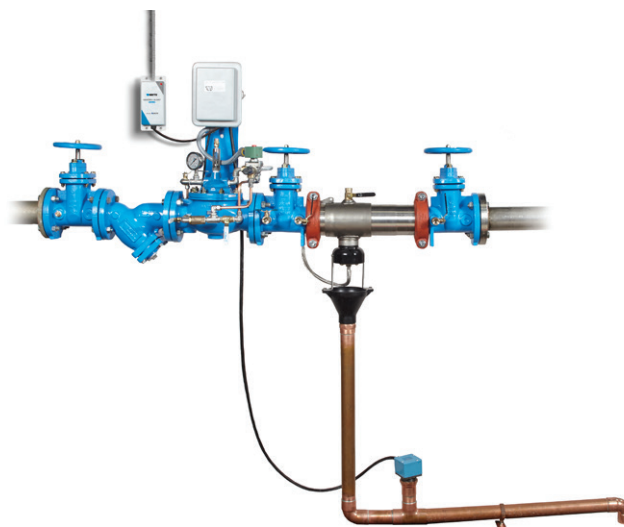
Hydrostatic Test Pressure: 350psig

End Connections: 150# Flanged

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.

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.



Agency Approvals For Backflow Assemblies:

- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at The University of Southern California (FCCCCHR-USC)
- ASSE 1013 Listed
- **UL Classified (US & Canada)
- **FM Approved
- AWWA Standard C511 Compliant
- End connections compliant to ASME B16.1 Class 125 a& AWWA Class D Flange
- NSF certified to NSF/ANSI 61-G

**Assembly configured with UL/FM Approved OS&Y and BFG valves. Less valve or NRS assemblies are not UL/FM approved configurations.



NOTICE

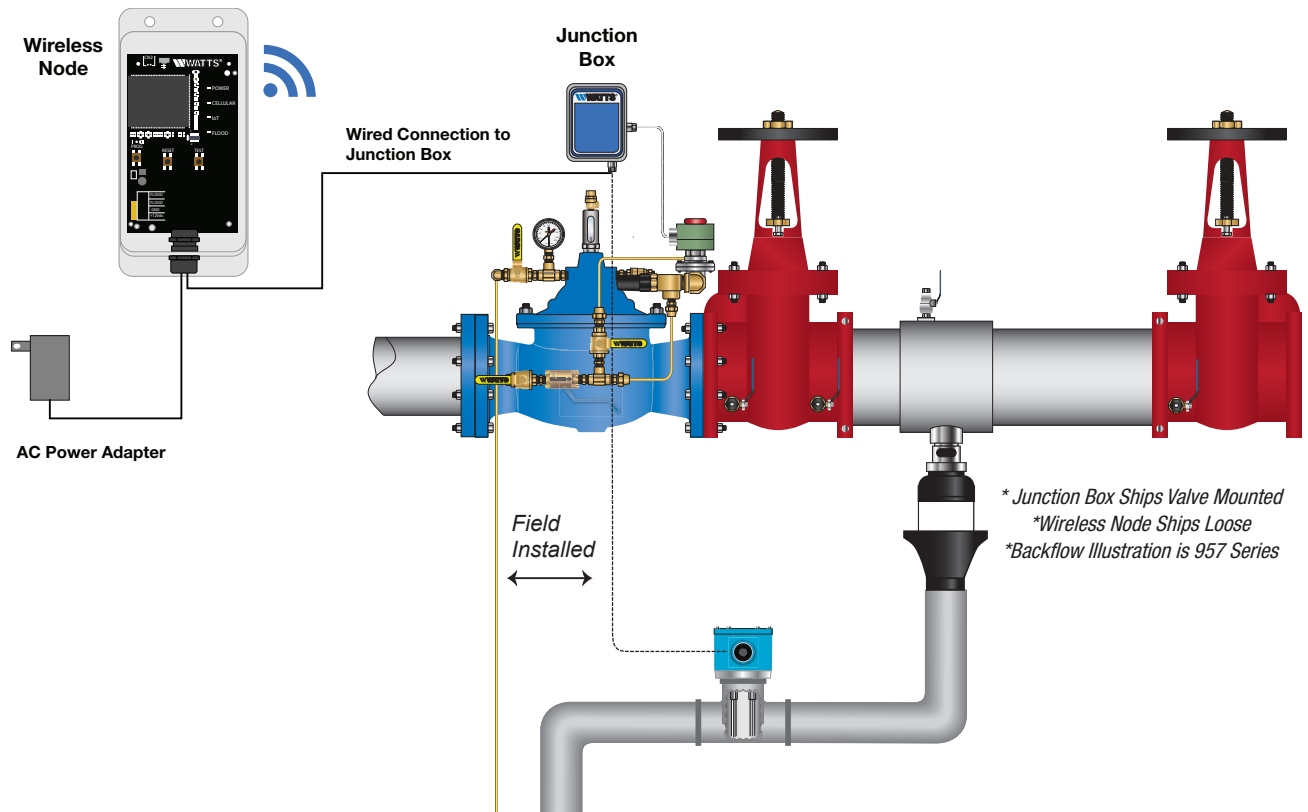
Use of the Watts Smart Flood Protection Shut Down Valve with SentryPlus Alert™ Technology does not replace the need to comply with all required instructions, codes, and regulations related to the installation, operation, and maintenance of an RPZ backflow preventer, including the need to provide proper drainage in the event of a discharge.

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

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

Engineered Flood Protection Valve Station with SentryPlus Alert™

Typical Installation



Operation

The Watts smart and connected Engineered Flood Protection Valve Station with SentryPlus Alert™ helps protect against catastrophic property damage that can occur due to Relief Valve discharge and/or a blocked or overwhelmed floor drain during normal relief valve operation. Typical conditions which can cause continuous relief valve discharge are:

- Fouled First Check Seat due to dirt, debris, or rocks
- Failed First Check Spring
- Clogged or blocked Relief Valve Sensing Line
- Relief Valve Diaphragm failure

The Watts LFF113FP Flood Protection Shutdown Valve is a normally open valve designed to be installed upstream of a Reduced Pressure Zone (RPZ) Backflow Prevention device. It is normally open and closes when continuous relief valve discharge through the drain pipe is sensed by the FS99 Flow Sensor, energizing the Solenoid Pilot.

The valve is equipped with a Solenoid By-Pass valve (normally closed) which manually closes the Main Valve when engaged. The JB113 Junction Box is equipped with an adjustable time delay to avoid valve closure due to intermittent or nuisance relief valve discharge. The Position Indicator provides local, visual indication of valve closure and is useful during valve start-up and troubleshooting. The valve remains closed and cannot re-open if flow stops or electrical service is interrupted, and must be manually reset after the RPZ is diagnosed and/or repaired.

The shutdown valve comes complete with the JB113 Junction Box with adjustable time delay, pre-wired Solenoid Valve, Manual Reset with Pressure Gauge, Position Indicator and FS99 Flow Sensor (field installed). The SentryPlus Alert™ Wireless Node Junction Box (WN113) ships loose with 6 feet of interconnecting cable and will be field mounted.

Engineered Flood Protection Valve Station with SentryPlus Alert™

Technical Specifications

Connected Valve Stations with 957 Backflow and ACV:

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, two drip tight shutoff valves, and required torsion spring check modules and relief valve shall be contained with a sleeve accessible single housing constructed from 304 (Schedule 40) stainless steel pipe with groove end connections. Torsion spring checks shall have replaceable elastomer discs and in operation produce drip tight closure against the reverse flow of liquid caused by backpressure or backsiphonage. Assembly shall be a Watts Regulator Company Series 957.

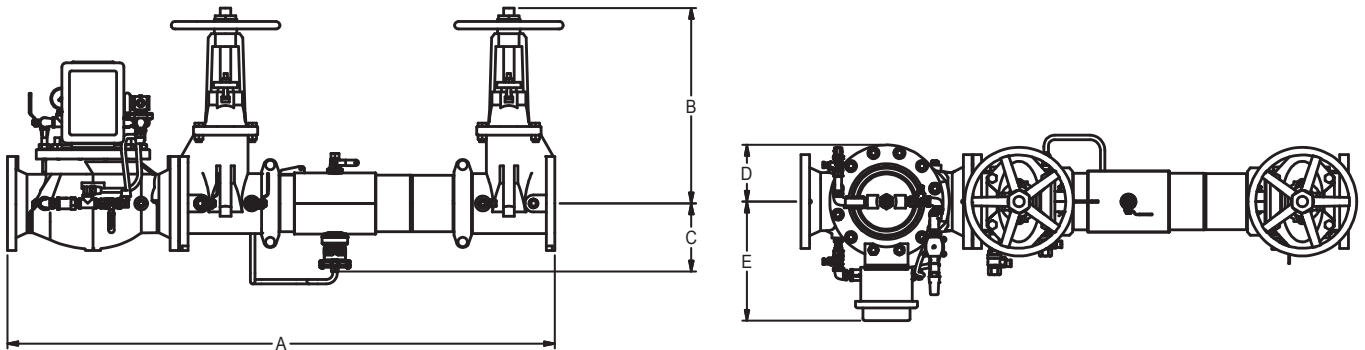
The Flood Protection Shutdown Valve shall be a normally open Diaphragm Valve installed upstream of the Reduced Pressure Zone (RPZ) Backflow Assembly, and automatically close if the RPZ relief valve begins to discharge. A Time Delay supplied in the JB113 Junction Box shall prevent the valve from closing on intermittent discharges from the RPZ relief valve. Once closed the ACV must be manually reset. The Electronics Junction Box (JB113) on ACV connects to SentryPlus Alert™ Wireless Node Junction Box (WN113) for wireless communication alerting the user via text, phone or email. Extra set of Remote Trip Indication terminals allow users to get remote alarms at their Building Management System (BMS) / PLC controller in the Control Room. The entire Valve station assembly shall be provided by the same manufacturer and be covered by a single warranty policy.

Connected Valve Stations with LF909 Backflow and ACV:

A Reduced Pressure Zone Assembly shall be installed at each cross-connection to prevent backsiphonage and backpressure backflow 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 and captured springs. Backsiphonage protection shall include provision to admit air directly into the reduced pressure zone via a separate channel from the water discharge channel. The assembly shall include two tightly closing shutoff valves before and after the valve and test cocks. The Lead Free* Reduced Pressure Zone Assembly shall comply with state codes and standards, where applicable, requiring reduced lead content. The assembly shall meet the requirements of ASSE Std. 1013; AWWA Std. C511-92; CSA B64.5; and UL Classified File No. EX3185. Listed by IAPMO (UPC). Approved by the Foundation for Cross Connection Control and Hydraulic Research at the University of Southern California. The assembly shall be a Watts Series LF909.

The Flood Protection Shutdown Valve shall be a normally open Diaphragm Valve installed upstream of the Reduced Pressure Zone (RPZ) Backflow Assembly, and automatically close if the RPZ relief valve begins to discharge. A Time Delay supplied in the JB113 Junction Box shall prevent the valve from closing on intermittent discharges from the RPZ relief valve. Once closed the ACV must be manually reset. The Electronics Junction Box (JB113) on ACV connects to SentryPlus Alert™ Wireless Node Junction Box (WN113) for wireless communication alerting the user via text, phone or email. Extra set of Remote Trip Indication terminals allow users to get remote alarms at their Building Management System (BMS) / PLC controller in the Control Room. The entire Valve station assembly shall be provided by the same manufacturer and be covered by a single warranty policy.

Engineered Flood Protection Valve Station with SentryPlus Alert™



957 Backflow and ACV Dimensions

MODEL SIZE		DIMENSION (approximate)													
		A		B(NRS)		B (OSY)		C		D		E		WEIGHT	
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg
2½	65	52¾	1330	9¾	238	16¾	416	5¼	133	9⅛	230	11	279	263	119
3	80	54¾	1381	10¼	260	18¾	479	5¼	133	9⅛	230	11¾	289	325	147
4	100	70¼	1784	12¾	310	22¾	578	6	152	14¾	365	12¾	311	660	299
6	150	85¾	2175	16	406	30½	765	6	152	14¾	365	14	356	1082	491
8	200	104	2642	19½	506	37¾	959	9¾	248	19¼	489	15¾	400	2106	955
10	250	123½	3137	23½	605	45¾	1162	9¾	248	21	533	18¾	473	3170	1438

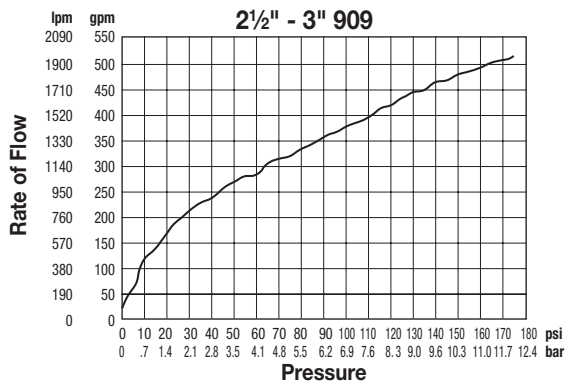
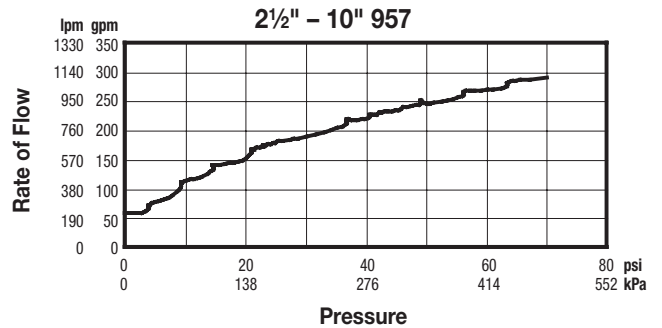
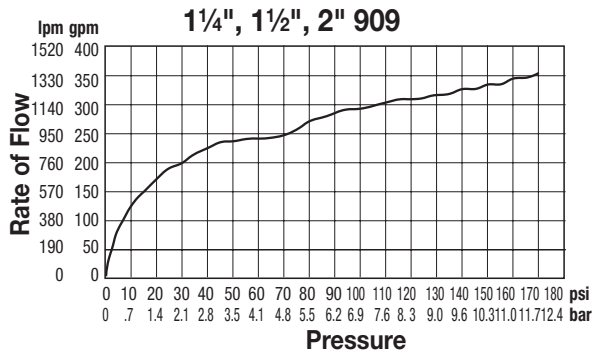
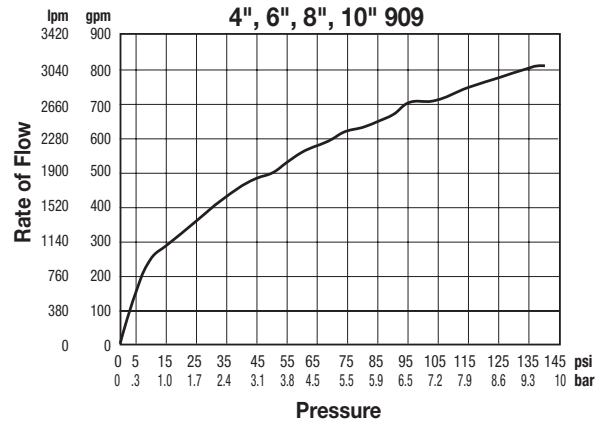
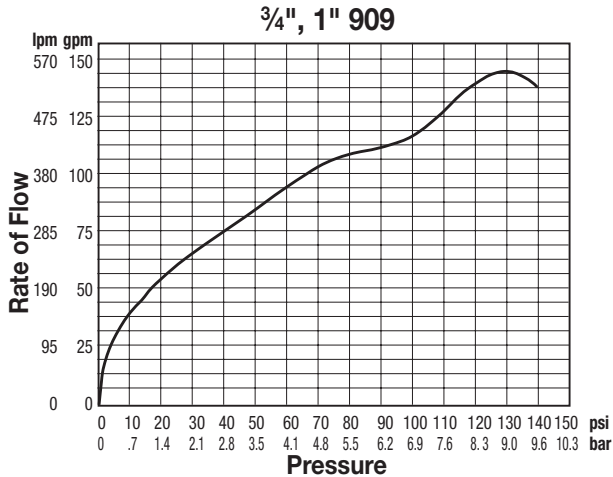
LF909 Backflow and ACV Dimensions

MODEL SIZE		DIMENSION (approximate)													
		A		B(NRS)		B (OSY)		C		D		E		WEIGHT	
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg
2½	65	52¾	1330	9¾	238	16¾	416	5¼	133	9⅛	230	11	279	263	119
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8	200	104	2642	19½	506	37¾	959	9¾	248	19¼	489	15¾	400	2106	955
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Series 909, and 957

Reduced Pressure Zone Assemblies

Relief Valve Discharge Rates



Note: These curves represent catastrophic or worst case discharge rates. These curves were developed by pressurizing the outlet of the backflow preventer with the second check valve's internals removed from the body.

Typical Flow Rates as sized by floor drain manufacturers		Drain Size
gpm	lpm	
55	209	2
112	426	3
170	646	4
350	1330	5

