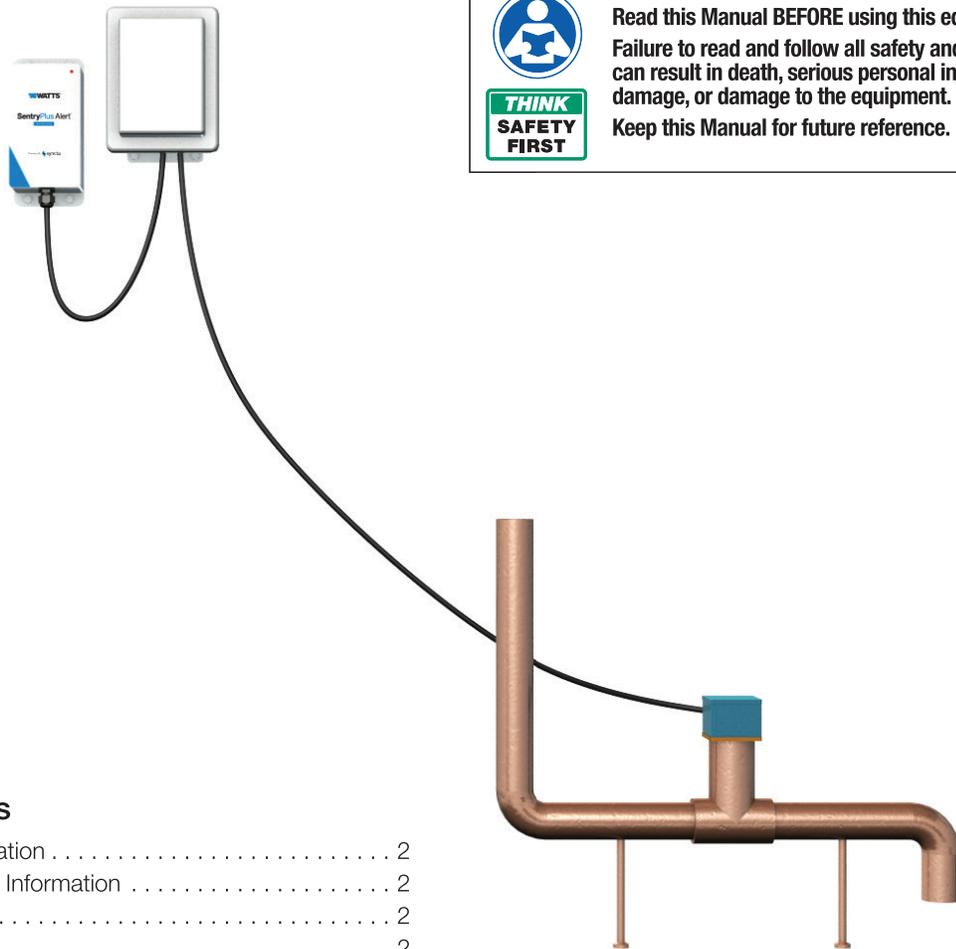


Installation, Operation, and Maintenance Manual

SentryPlus™ Alert

Universal Upgrade Kit



⚠ WARNING

 Read this Manual **BEFORE** using this equipment. Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment.

THINK SAFETY FIRST

Keep this Manual for future reference.

Table of Contents

Important Safety Information	2
Understanding Safety Information	2
Description	2
List of Parts	2
Required Tools and Materials for Installation	2
Installation and Operation	3
ISolenoid Operation (For Existing LFF113RFP Installations Only)	3
Installing the Flow Sensor (Backflow Upgrade Kit Only)	3
Wiring/Retrofitting the junction box	4
Installing the Wireless Node	6
Registering Your Device and Alert Configuration	7
Start-up Instructions	8
Warranty	8

Important Safety Information

⚠️ WARNING



To avoid death, serious personal injury, property damage, or damage to the equipment:

- Learn how to properly and safely use the equipment **BEFORE** installing, setting up, using, or servicing.
- Keep the manual available for easy access and future reference.
- Replace missing, damaged, or illegible manual and product labels.
- Read the manual and all product labels and follow all safety and other information.
- Replacement manuals available at Watts.com.

Understanding Safety Information



This safety-alert symbol is shown alone or used with a signal word (DANGER, WARNING, or CAUTION). A pictorial and/or safety message to identify hazards and alert you to the potential for death or serious personal injury.

⚠️ DANGER

Identifies hazards which, if not avoided, will result in death or serious injury.

⚠️ WARNING

Identifies hazards which, if not avoided, could result in death or serious injury.

⚠️ CAUTION

Identifies hazards which, if not avoided, could result in minor or moderate injury.

NOTICE

Identifies practices, actions, or failure to act which could result in property damage or damage to the equipment.



This pictorial alerts you to the need to read the manual.



This pictorial alerts you to electricity, electrocution, and shock hazards.

Description

- SentryPlus™ Alert Technology Universal Upgrade Kit detects catastrophic discharge from the relief valve of an RPZ (Reduced Pressure Zone) backflow preventer that can cause flooding due to excessive discharge and/or a blocked/undersized floor drain
- Wirelessly issues multi-channel alerts (call, text, email)
- Can be installed without taking equipment offline
- Can be installed with any existing RPZ backflow preventer
- Can be used to upgrade an existing Watts LFF113RFP ACV to support SentryPlus Alert Technology

List of Parts

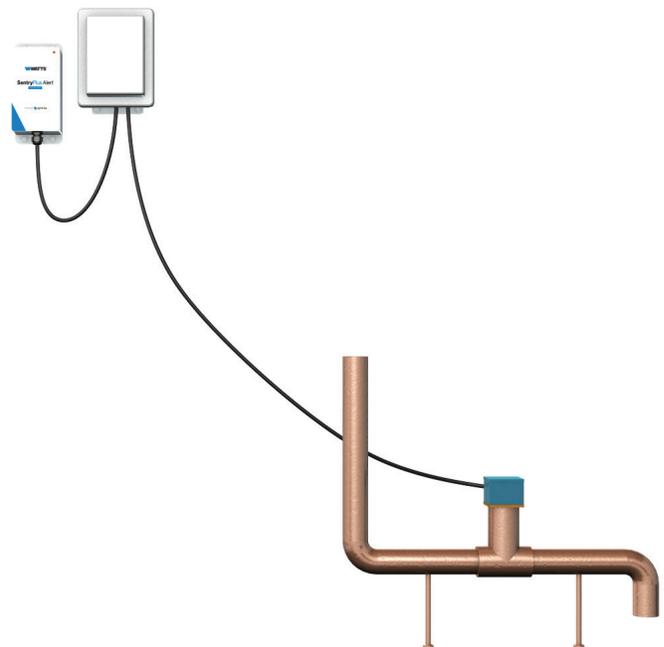
There are two types of SentryPlus Alert Technology Universal Upgrade Kits.

For existing 113RFP Flood Protection ACV upgrades, the kit consists of following:

- Smart Electronics Junction Box (JB113)
- Wireless Node (WN113)

For existing Backflow RPZ upgrades, the kit consists of following:

- Smart Electronics Junction Box (JB113)
- Wireless Node (WN113)
- Flow Sensor (FS99)
- 2" Tee (PVC) with NPTF threaded end connections to mount FS99 Flow Sensor



Required Tools and Materials for Installation

- ❑ Small Phillips head screwdriver
- ❑ Screws to mount Wireless Node; holes are 0.27" diameter. Select screws based on your application conditions.

Installation and Operation

Solenoid Operation (For Existing LFF113RFP Installations Only)

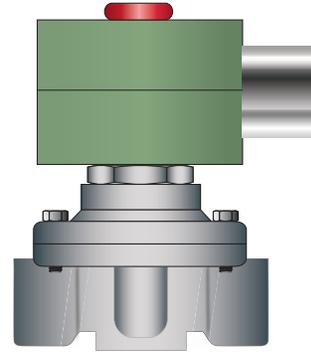
The Solenoid is prewired to the existing Junction Box, and must be rewired by a certified electrician. The solenoid is equipped with a Solenoid Bypass valve (normally closed) which manually closes the Main Valve when engaged.

Opening the Solenoid Bypass Valve pressurizes the Main Valve cover as indicated by Pressure Gauge, closing the Main Valve.

Closing Solenoid Bypass Valve and opening the Manual Reset Ball Valve returns the Main Valve to the full open position.

Pressure Gauge returns to zero when the Main Valve is fully open.

NOTE: Manual Reset Ball Valve must be closed for normal operation.



Installing the Flow Sensor (Backflow Upgrade Kit Only)

⚠ WARNING

Certified electrician to connect main power and Flow Sensor to Junction Box.

The Flow Sensor is installed in the discharge piping from the RPZ relief valve. If the Flow Sensor senses water in the discharge piping, it will signal the Junction Box to close the valve.

Installation Notes

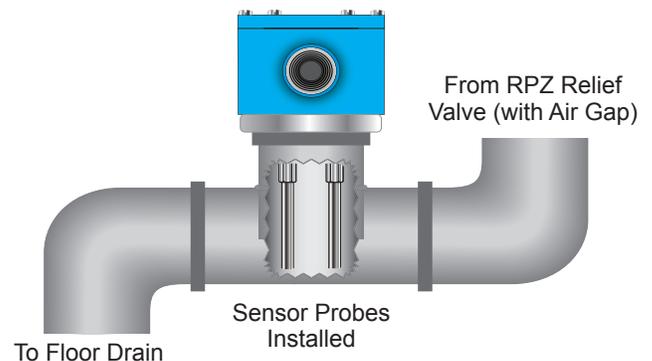
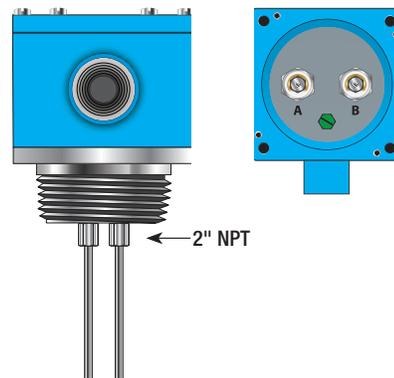
1. Install the supplied tee for the Flow Sensor in the RPZ discharge line in the HORIZONTAL position as shown below.
2. Cut Sensor Probes to length. The ends of the Sensor Probes should be located between $\frac{1}{3}$ and $\frac{1}{2}$ of the pipe's inner diameter from the pipe bottom. The probes MUST NOT BE less than $\frac{1}{4}$ " from the pipe wall.
3. Install Flow Sensor in tee, again ensuring that it is in the HORIZONTAL position as shown below.

⚠ CAUTION

Ensure Sensor Probes do not contact pipe bottom or sides.

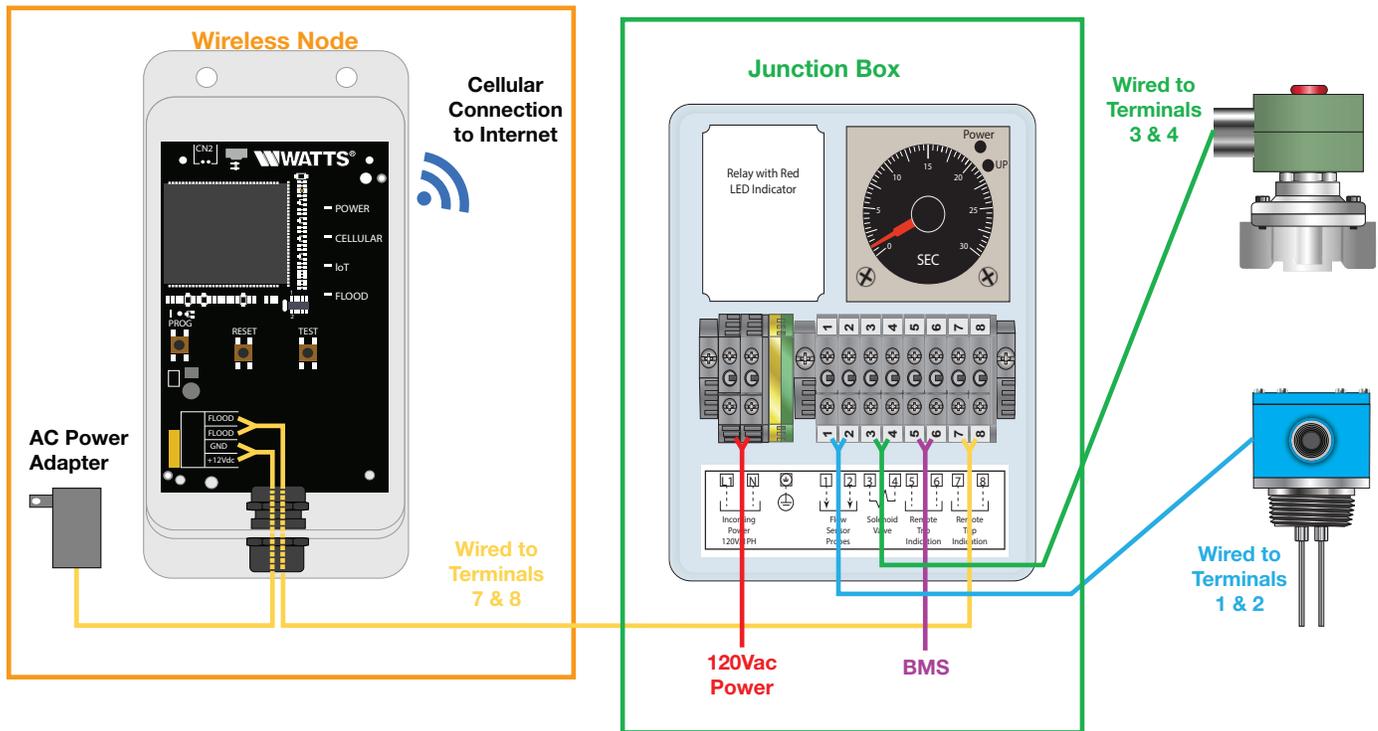
Front View

Top View with
Cover Removed



Installation and Operation

Wiring/Retrofitting the junction box



The Junction Box is valve-mounted, but includes brackets for wall mounting.

CAUTION

When retrofitting an existing Model 113RFP Flood Protection ACV, disconnect the electrical power before retrofitting the old Junction Box to the new one.

NOTICE

During the retrofitting process on the 113RFP, the system will not be monitoring for flood detection or protection..

Wiring the Junction Box

WARNING



Ensure that all power supply to the Junction Box is turned off before making any connections to the Junction Box. Failure to do so may result in electrocution, personal injury, and /or death.

For Existing LFF113RFP Installations Only

- After removal of power from the circuit, disengage the wiring from:
 - Main terminals inside Junction Box
 - Terminals 1 and 2 (Flow Sensor)
 - Terminals 3 and 4 (Solenoid)
 - Terminals 5 and 6 (remote trip indicator, if wired)
- Remove the Junction Box from the ACV or wall mount
- Replace the Junction Box with the new, upgraded Junction Box. The physical dimensions of the new Junction Box are identical to older units and can be mounted at the same location.
- The solenoid valve must be rewired into the new junction box using terminals 3 and 4. If needed, the connection can be extended by using similar gauge extension wire and a terminal box. The solenoid must be rewired by a certified electrician.

For All Installations

- Connect the Flow Sensor to the Junction Box using terminals 1 and 2.
- Connect to a Building Management System or alarm for remote indications of a continuous water discharge using terminals 5 and 6.
- Connect to the Wireless Node using terminals 7 and 8.

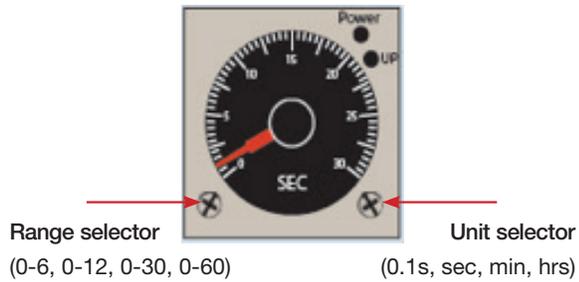
NOTICE

- The terminal block accepts 10-22 AWG.
- Terminals 5 and 6 have 120V, 10A maximum.
- The Junction Box voltage is 120V.
- The Sensor Probe voltage is 120VAC, 1.5mA.
- The terminal block has a less than 1 amp draw.

Installation and Operation

Adjusting the Time Delay

- Adjust the time delay to avoid alert / valve closure due to intermittent or nuisance relief valve discharge. The delay is adjustable from 0 seconds to over 1 hour.
- Adjust the time delay by using the delay adjustment dial in the Junction Box.
- Use a small Phillips head screwdriver to adjust either the range selector (0-6, 0-12, 0-30, 0-60) on the left side or the unit selector (0.1 sec, sec, min, hr) on the right side.
- Increase the time delay by adjusting the dial clockwise; decrease the time delay by adjusting the time delay counter-clockwise.
- Recommended adjustment delay is 30-60 seconds. However, the ideal set point can vary widely depending on the product application, including drain size, location, backflow preventer, water pressure, and tolerance for discharge.



RANGE SELECTION	UNIT SELECTION			
	0.1 sec	Sec	Min	Hrs
0-6	0.05-0.6s	0.5-6s	0.5-6min	0.5-6hr
0-12	0.1-1.2s	1-12s	1-12min	1-12hr
0-30	0.25-3s	2.5-30s	2.5-30min	2.5-30hr
0-60	0.5-6s	5-60s	5-60min	5-60hr

Installation and Operation

Installing the Wireless Node

⚠ WARNING



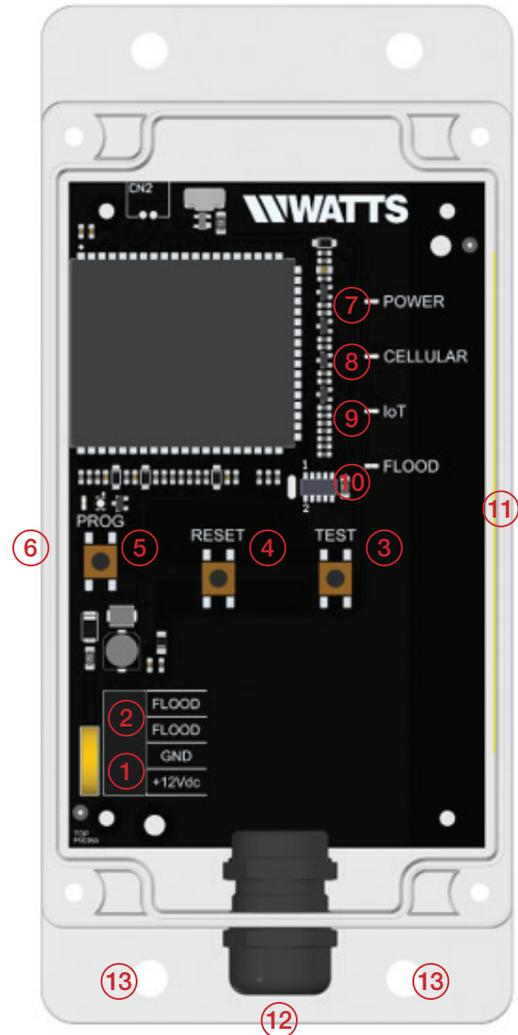
Ensure all power supply to the Wireless Node is turned off before making any connections to the Wireless Node. Failure to do so may result in electrocution, personal injury, and/or death.

1. Identify preferred location for mounting Wireless Node. The Wireless Node must be located away from large metal components and structures that may block the cellular signal. In addition, the cellular antenna is located on the inner sidewall of the enclosure (11). When mounting, ensure that this side of the device is away from any walls, wires, pipes, or other obstructions, especially anything metallic.
2. Before mounting, plug in the Wireless Node to ensure that a connection can be made in the preferred location. Once plugged in, the device will automatically go through a start-up process. A cellular connection has been made if, after the start-up process, the Cellular LED (8) is a steady blue. If it is blinking, there is a poor connection, and if it is off, there is no connection. If there is a poor or no connection, identify a new location for mounting.
3. Unplug the Wireless Node from the power supply.
4. Mount the Wireless Node in the identified location using the four 0.27" diameter mounting holes (13). Screws are not included.
5. Route wires from terminals 7 and 8 of the Junction Box through the wiring gland (12) and connect to the Wireless Node at the "Flood" screw terminal (2). Polarity does not matter. Six feet of wire is supplied with the unit, but the Wireless Node can be located up to 100 feet away from the Junction Box. If additional wire is used, it must meet the required rating for the Junction Box (300V, 16-24 AWG).
6. Route wires for included 12VDC power supply through the wiring gland (12) and connect to the Wireless Node at the appropriate screw terminal (1). Polarity must be correct or the Wireless Node will not operate.

⚠ CAUTION

Use only the provided power supply as other power supplies may not meet the rating and specifications for this device.

7. Tighten the wiring gland (12) to prevent water or dust from entering the Wireless Node.
8. Connect the power supply to the Wireless Node and Junction Box.



Installation and Operation

Wireless Node Operation

1. **Start-Up** – Upon start-up, the Power LED (7) will light up a steady green to indicate power is supplied. The Wireless Node will automatically go into its start-up sequence. During the start-up sequence, the light over the Program button (5) will begin as solid white and then change to a blinking green, indicating the Wireless Node is searching for a cellular connection. Once a cellular connection is established, the Program button light will start blinking cyan, indicating that the Wireless Node is connecting to the Cloud. Once a Cloud connection is established, the Program button light will blink rapidly for a few seconds, and then shut off. The Cellular LED (8) and IoT LED (9) should both be a solid blue.
2. **Cellular Connection** – Once the start-up sequence is completed, the Cellular LED will be a steady blue if there is a good connection. It will blink if there is a poor connection. There will be no color if there is no connection.
3. **IoT Connection** – If there is a Cloud connection, the IoT LED will be a steady blue. There will be no color if it is off.

NOTICE
If there is no Cloud connection, then notifications will not be sent to the user via Syncta.

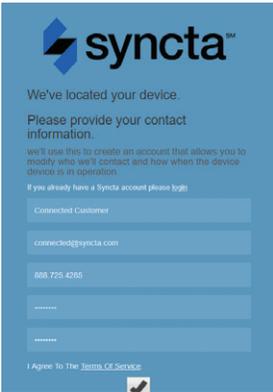
4. **Flood LED** – If a flood event occurs, the Flood LED (10) will be a steady orange. It will remain on so long as there is a flood condition.
5. **Test Button** – When Cellular and Cloud connections have been made, a test message can be sent through the Syncta app by pressing the Test Button (3).
6. **Reset Button** – You can reset the Wireless Node and restart the start-up sequence by pressing the Reset button (4). This will cause all on-going operations to cease.
7. **Program Button** – The Program button (5) should not be pressed and is for factory use only.

Registering Your Device and Alert Configuration

1. Using a smart phone or tablet, scan the QR code on the side of the Wireless Node, or go to <https://connected.syncta.com>.



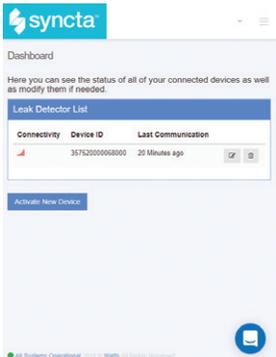
2. When prompted, enter the Device ID. The Device ID is a 15-digit number found beneath the QR code on the side of the Wireless Node.



3. Follow onscreen prompts to create a Syncta account, or if you are an existing Syncta user, log in to your account. The device can be registered to multiple accounts.



4. Once the device is registered to your account, follow prompts to add notifications. To manage alerts, login to your account on Syncta.com.



Start-up Instructions

1. Open Junction Box. Apply power and observe the Electric Relay Control.
2. Pour adequate amount of water into RPZ Relief Valve Air Gap until the red LED indicator light on the Electrical Relay illuminates / flashes. This indicates the Flow Sensor is properly installed and is sensing water in the discharge piping.
3. Trap water in discharge piping and observe red LED on Electrical Relay. A message will be sent via Syncta when the duration of the time delay elapses, observe Flood LED (10) to ensure activation after the time delay. Adjust time delay to customer/project specifications. When connected to a LFF113RFP ACV, solenoid will energize and valve will go closed after time delay elapses. To manually reset valve, refer to step four in the Start-Up Instructions of the LFF113FP Installation, Operation, and Maintenance Manual, available on watts.com
4. For final test simulate actual RPZ Relief Valve discharge and observe floor drain for excessive pooling or flooding. Re-adjust time delay and Adjustable Closing Speed (when used with a LFF113RFP ACV) control as needed to achieve desired alert/valve closure time.

Valve Travel

VALVE SIZE - INCHES	1 1/4	1 1/2	2	2 1/2	3	4	6	8	10
Travel - Inches	3/8	3/8	3/8	5/8	3/4	1	1 1/2	2	2 1/2

Valve Cover Chamber Capacity

VALVE SIZE - INCHES	1 1/4	1 1/2	2	2 1/2	3	4	6	8	10
fl.oz.	4	4	4	10	10	22	70		
U.S. Gal								1 1/4	2 1/2

Limited Warranty: Watts (the "Company") warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge.

THE WARRANTY SET FORTH HEREIN IS GIVEN EXPRESSLY AND IS THE ONLY WARRANTY GIVEN BY THE COMPANY WITH RESPECT TO THE PRODUCT. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE COMPANY HEREBY SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The remedy described in the first paragraph of this warranty shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication, improper installation or improper maintenance or alteration of the product.

Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult applicable state laws to determine your rights. **SO FAR AS IS CONSISTENT WITH APPLICABLE STATE LAW, ANY IMPLIED WARRANTIES THAT MAY NOT BE DISCLAIMED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF ORIGINAL SHIPMENT.**



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