WATTS 009-FS Series BMS Sensor Connection Kit Installation Guide

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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. Keep this Manual for future reference.

WARNING

You are required to consult the local building and plumbing codes prior to installation. If the information in this manual is not consistent with local building or plumbing codes, the local codes should be followed. Inquire with governing authorities for additional local requirements.

NOTICE

Use of the 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 the backflow preventer to which it is attached, 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.

Monitor relief valve discharge with smart and connected technology to detect and notify of flooding. The BMS Sensor Connection Kit activates the integrated flood sensor to enable functions that detect flood conditions. The BMS Sensor Retrofit Connection Kit upgrades existing installations by integrating and activating the flood sensor to enable functions for flood detection. When excessive relief valve discharge occurs, the flood sensor energizes a relay signaling flood detection and triggers real-time notification of potential flood conditions through the building management system, or BMS.

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Kit Components

All kits include the sensor activation module and power adapter to enable the flood sensor. Retrofit kits also include the flood sensor and related components. If any item is missing, speak with your account representative.

A. Sensor activation module with an 8′ 4-conductor electrical cable, ground wire, and 4 attachment screws

B. Four deflectors (For Series 009, sizes ½” to 2″, with flood sensor)

C. 24V DC power adapter (requires a 120VAC, 60Hz, GFI-protected electrical outlet)w

D. Included in retrofit kits:

- Sizes ½” to ¾” flood sensor with captive screw and deflector
- Sizes 1″ to 1½” flood sensor with 2 deflectors (1″ and 1¼” to 1½”) and 2 mounting bolts
- Sizes 2″ to 3″ flood sensor with deflector and 2 sets of mounting bolts (larger bolts for LF009 2½” to 3″ only)

NOTICE

The connection kits are suitable only for new or existing installations of the specified valve assemblies.

Requirements

- #2 Phillips screwdriver
- 3⁄16″ Allen wrench
- ½” Wrench
- Instrument with small tip to change DIP switch settings
- Power source, ranging from 12V to 24V
- Wire stripper

A Note About the Deflector

A properly sized deflector is required when the flood sensor is activated on either new or existing valve installations of Series 009 reduced pressure zone assemblies, sizes ½” to 2″. The deflector helps seat the flood sensor against the backflow valve and direct discharge from the valve. Each deflector is embossed with a positioning indicator to assist installation.

½" – ¾" 1" 1¼" – 1½" 2"

New valve installation
The sensor connection kit includes four (4) deflectors marked by size. Select the size designed to fit the backflow relief valve of the installation.

Remove the flood sensor from the valve then follow procedures in the next two sections to install the deflector with the flood sensor and configure and mount the sensor activation module.

Existing valve installation
The following procedures include the deflector with installation of the sensor connection kit.

Install the Flood Sensor

For Series 009 assemblies, sizes ½” to 2″, attach both the deflector and the flood sensor to the backflow relief valve. For sizes ½” to ¾”, the deflector fits inside the flood sensor. For sizes 1″ to 2″, the deflector fits inside the relief valve.

NOTICE

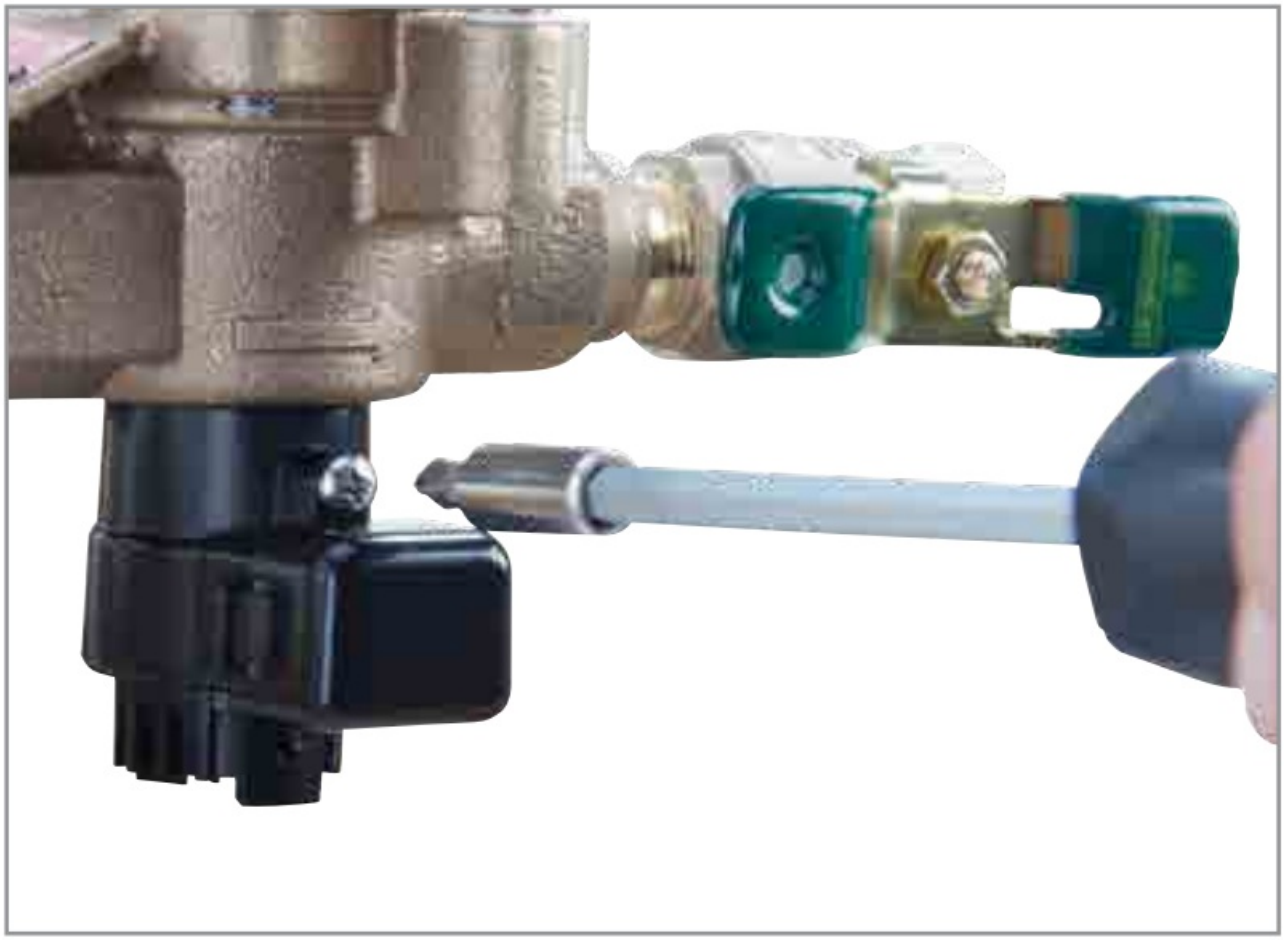
The deflector must be installed for the flood sensor on Series 009, sizes ½” to 2″, to function properly.

Series 009, sizes ½” – ¾”

1. Align the grooves of the deflector with internal ribs of the sensor to insert the deflector inside the flood sensor.

2. Position the flood sensor on the relief valve.

3. Use a #2 Phillips screwdriver to tighten the captive screw.



Series 009, sizes 1″ – 3″; Series 909 Small, sizes ¾” – 2″

1. Align the deflector to fit inside the relief valve. (For Series 009, sizes 1″ to 2″ only. Some sensor connection kits include multiple deflectors. Install the deflector designed specifically for the backflow valve size in use.)

2. Position the flood sensor on the relief valve and insert the two mounting bolts.

3. Tighten the bolts to secure the deflector and the flood sensor. Do not overtighten.
   - For Series 009 sizes 1″ to 1½” and Series 909 Small sizes ¾” to 1″, use a 3⁄16″ Allen wrench.

• For Series 009 sizes 2″ to 3″ and Series 909 Small sizes 1¼” to 2″, use a ½” wench.

Mount the Sensor Activation Module

Set the SW1 DIP switch on the sensor activation module by the wet threshold table below then attach the module to the flood sensor

DIP switches on the sensor activation module can be used to specify the wet threshold (sensitivity to water discharge) through SW1 and the timer delay (duration before alarm) through SW2. Scan the QR code for more information.

The sensor activation module receives a signal from the flood sensor when a discharge is detected. If the

discharge meets the conditions of a qualifying event, the normally open contact is closed to provide a signal to the BMS input terminal.

NOTICE

The wet threshold value **must** be set by backflow valve size.

1. Use the #2 Phillips screwdriver to detach the four screws on the sensor activation module to remove the cover.

2. Locate the valve size in the following table then use an instrument with a pointed tip to slide the SW1 switches to the positions noted for that size. The wet threshold option values range from 40 (default) to 55 (most sensitive).

3. Press the RESET button to activate the new settings.

4. Reattach the cover with the four screws, making sure the O-ring inside the cover is properly seated to maintain a seal.

5. Remove the dust cover from the flood sensor.

6. Press the sensor activation module with cable on to the flood sensor.

NOTICE

Retain the dust cover to protect the flood sensor during temporary instances when the sensor activation module may need to be removed or replaced.

7. Check that the sensor activation module is seated securely on the flood sensor.

Attach the Sensor Activation Module Cable to the BMS Controller

The 4-conductor sensor activation module cable should be attached to the BMS controller to transmit a normally open contact signal and provide power to the sensor activation module. The contact signal closes when a discharge is detected.

To connect the module cable to the controller

1. Use the wire stripper to cut away enough insulation toexpose 1 to 2 inches of the conductor wires.
2. Insert the white and green wires into the input terminal.

NOTICE

Either the BMS power source (ranging from 12V to 24V) or the 24V DC power adapter provided can be used. With each power source, an earth ground connection is required.

If using the optional power adapter, skip to the next set of instructions. Be sure to use the ground wire provided if there is no other earth ground on the BMS controller

3. Insert the red wire in the power terminal. (A power source ranging from 12V to 24V is required.)
4. Insert the black wire in the ground terminal.

⚠ **WARNING**

The earth ground must be connected to the BMS controller before the flood sensor is put in operation.

To use the optional 24V DC power adapter

Distinguish the positive wire from the negative one. The positive wire has white stripes and must be inserted into the power terminal; the negative wire, into the ground terminal.

1. Connect the positive power adapter wire (black with white stripe) to the red wire of the sensor activation module cable and insert the wires into the power terminal.
2. Connect the negative power adapter wire (black with no stripe) to both the black wire of the sensor activation module cable and the ground wire (if needed) then insert the wires into the ground terminal.
3. Plug the power adapter into a 120VAC, 60Hz, GFI protected electrical outlet.

The flood sensor LED is steady green when the unit is ready.

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Documents / Resources

	[WATTS 009-FS Series BMS Sensor Connection Kit] [pdf] Installation Guide 009-FS, LF009-FS, LFU009-FS, SS009-FS, U009-FS, 009-FS Series BMS Sensor Connection Kit, BMS Sensor Connection Kit, Sensor Connection Kit, Connection Kit

References

- Watts | Plumbing, Heating and Water Quality Solutions