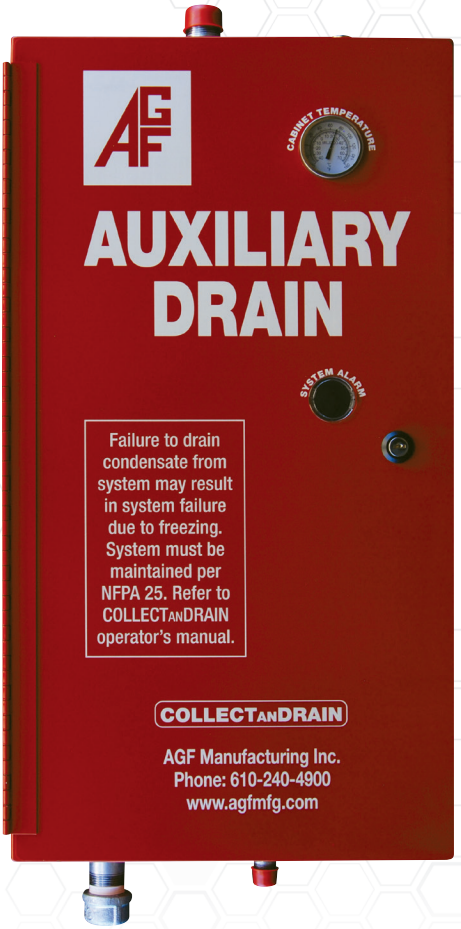
COLLECTANDRAIN®

Model 5450



Owner's Manual

INST-5450_v2 · 3/23

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COLLECTANDRAIN®

Model 5450

Auxiliary Drain with Freeze Protection and Drain Trap

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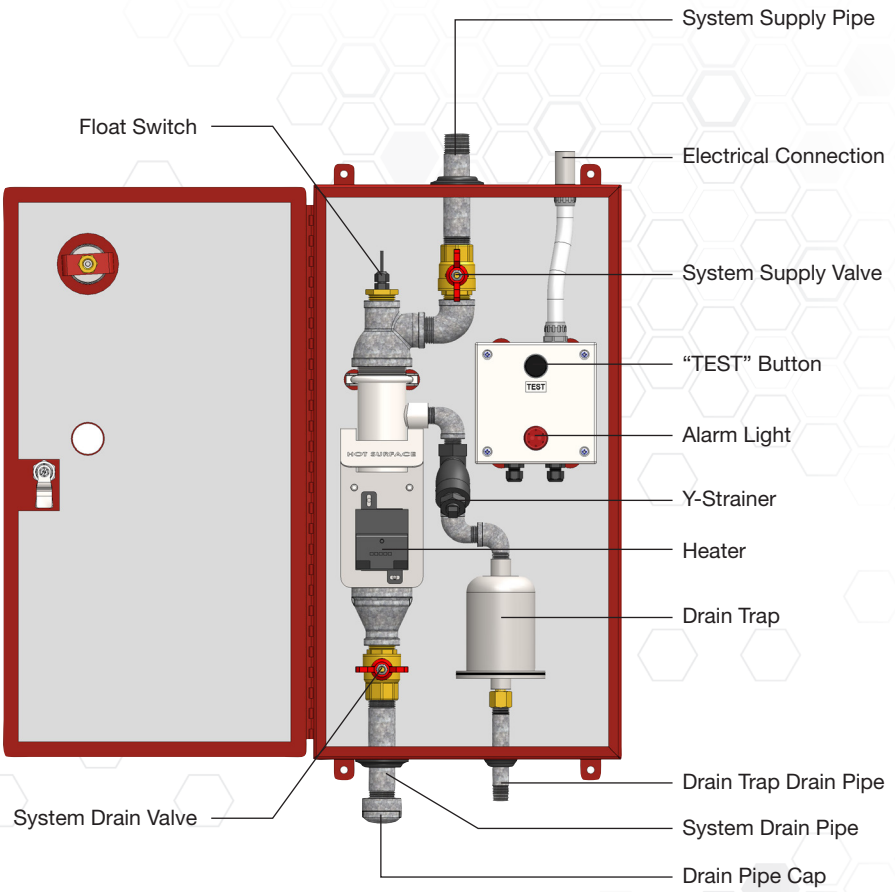


Model 5450 COLLECTANDRAIN

The COLLECTANDRAIN Model 5450 is a heated and insulated auxiliary drain (condensate collection assembly/drum drip/low-point drain) with Drain Trap, Float Switch, and Alarm for dry pipe sprinkler systems. The M5450 is designed for installation in climates where freezing or below freezing temperatures are present and result in the failure of typical collection assemblies. The M5450 maintains a comfortable temperature above freezing while minimizing power consumption.

CAUTION: The heater and its deflector bracket may be hot. Use care when accessing the main cabinet for any reason.

INSTALLATION INSTRUCTIONS

Unpacking:

1. Unpack the COLLECTANDRAIN M5450 unit and carefully inspect for any damages from shipping.
2. Verify box contents:
   - COLLECTANDRAIN M5450 unit
   - Four (4) Rubber Mounting Washers
   - Two (2) Door Keys
   - Electrical Wiring Schematic
   - M5450 System Drawing

Sprinkler System Preparation:

If installing in a new system, proceed to Mounting Instruction below, otherwise continue with Sprinkler System Preparation.

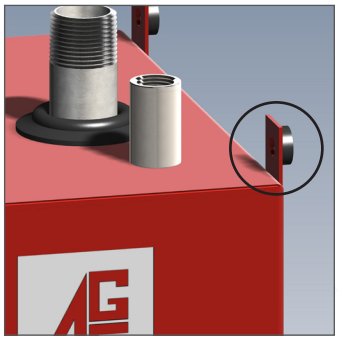
If adding additional installations, see NFPA 13, chapters 24 and 26; and NFPA 25, chapter 14.

1. Isolate the zone where the COLLECTANDRAIN will be installed.
2. Relieve air pressure from the branch line.
3. Remove the existing auxiliary drain.

Mounting:

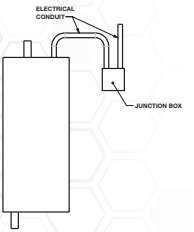
Use the mounting tabs (4 – 3/8" holes) to mount the M5450 to a wall or other structure. If wall is uneven use bushings or stand-offs to prevent cabinet from bending when mounting.

1. Place the (4) Rubber Mounting Washers behind the mounting tabs to hold the M5450 off the wall. Select fasteners (not provided) capable of supporting the 55 lb. weight of the M5450.
2. Connect to the 1" NPT supply pipe in accordance with NFPA 13 regarding low-point drain installations.
3. Connect the ½" NPT Drain Trap pipe to suitable drain plumbing capable of accepting the discharge and directing it to a drain connection or other safe location in order to avoid a potential slip and fall situation. The use of an Air Gap is recommended.



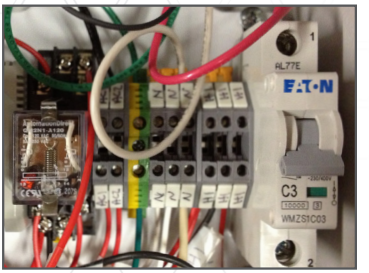
Wiring:

The M5450 is protected internally by a 3A circuit breaker and requires a 120VAC power source. Ensure the breaker in the main panel is sized appropriately. Refer to the image below that coincides with your model.



Warning: NEC 300.7 (A) "Raceways Exposed to Different Temperatures" requires the electrical conduit be filled with an approved material after wiring is complete. An approved sealant, sealing fitting, or low-point junction box must be installed at the cabinet coupling. Failure to do so risks condensation intrusion into the control panel, potential system failure, and will void all warranties.

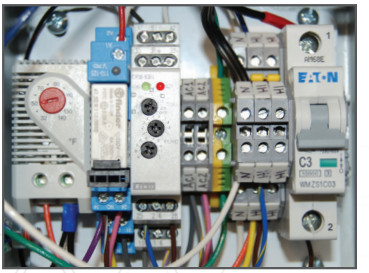
1. Run conduit to the 1/2" connection on the top of the unit.
2. Open the door using the supplied keys.
3. Loosen the four screws on the front of the M5450 Alarm Panel and carefully remove the door.
4. Run a single set of appropriately sized power wires into the Alarm Panel (Refer to the electrical schematic as necessary).



M5400A/B

NOTE: Use dedicated junction boxes (not provided) to make wire connections when installing more than one M5450 on a circuit.

5. Connect the 120VAC hot wire to the circuit breaker.
6. Connect the 120VAC neutral wire to one of the neutral terminals.
7. Connect the ground wire to the green/yellow ground terminal.



M5400H

The M5450 can be connected to a Remote Panel. This is accomplished through a set of N.O. (close on alarm) auxiliary contacts.

1. Run two additional wires into the M5450 Alarm Panel.
2. Connect one wire to the AC1 (auxiliary contact) terminal.
3. Connect the other wire to the AC2 (auxiliary contact) terminal.
4. Connect these wires to the appropriate place in the Remote Panel.

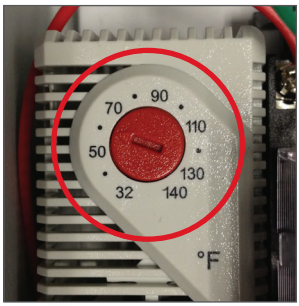
Verify Correct Operation:

If you are installing the standard M5450, please verify correct operation using M5450 instructions below. If you are installing a M5450H with the optional Heater Operation Trouble (HOT) Monitor, please verify correct operation using M5450H instructions below. If model is not specifically identified refer to images on pg. 5 for proper verification.

M5450

1. Apply power to the M5450 and verify that correct voltage is present.
2. Turn on the circuit breaker inside of the M5450 Alarm Panel.
3. Push and hold the "TEST" button on the front of the Alarm Panel for five seconds to verify that the alarm sounds and the light blinks.
4. Turn the Thermostat Set-Point Dial (red) clockwise until the heater turns on.
5. Reset the Thermostat to the factory default of 60° F.

NOTE: It is the owner's responsibility to set the thermostat based on climate conditions of the M5450 install location. The default setting of 60° F (the dot between 50 & 70) is adequate for outside temperatures down to 0° F. If operating below this temperature, the set-point should be increased. Consult AGF for set-point guidelines.

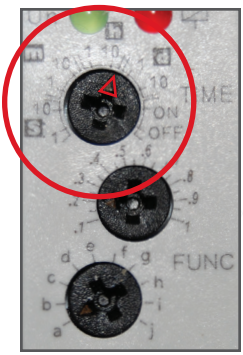


6. Install the Alarm Panel cover and tighten the four screws.
7. Close and lock the cabinet door using the supplied keys.

NOTE: If installation was in an existing system return the system back to normal operating conditions. If installation was in a new system activate the system for normal operating conditions.

M5450H

1. Apply power to the M5450H and verify that correct voltage is present.
2. Turn on the circuit breaker inside of the M5450H Alarm Panel.
3. Push and hold the "TEST" button on the front of the Alarm Panel for five seconds to verify that the alarm sounds and the light blinks.
4. Turn the top dial of the Timer counterclockwise from the **10h** to the **10s** band. The leg of the cross with the arrow (highlighted in red) points to the band.



1. Rotate the Thermostat Set-Point dial (red) clockwise until the heater turns on.

NOTE: The alarm will sound approximately 2 seconds after the heater turns on.

2. Reset the Thermostat Set-Point to the factory default of 60° F and reset the top dial of the Timer to the 10h band.

NOTE: The top dial is a maximum time setting and NOT the Timer's delay setting. The middle dial controls the delay for the Timer. The factory default is 2 hours.

3. Install the Alarm Panel cover and tighten the four screws.
4. Close and lock the cabinet door using the supplied keys.

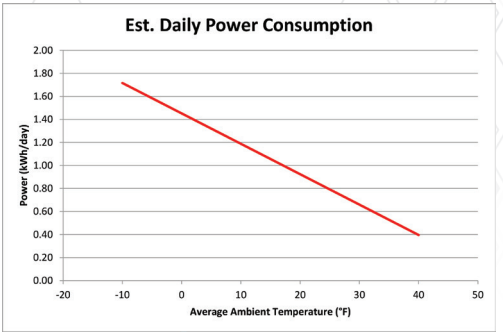
OPERATING INSTRUCTIONS

The M5450 is equipped with a Drain Trap which provides a controlled and continuous means of slowly draining the condensate it collects. The Drain Trap is piped in parallel with the main collection pipe so when the main pipe is approximately ¾ full any additional condensate is diverted to the Drain Trap. Once enough condensate accumulates in the Drain Trap its float opens the Drain Trap's discharge port and slowly drains the water without releasing system air. This continues until enough water has been drained and the float closes the Drain Trap's discharge port. In addition, the Drain Trap is protected from debris and contamination by a Y-Strainer connected to its inlet.

A 150W heater is also included in the M5450 and is controlled by a user-set thermostat. The factory default setting of 60° F is suitable for conditions down to 0° F. Consult with AGF for recommended settings if operating the M5450 in an area below 0° F. The thermostat controls the heater operation to within approximately ± 10° F of the set-point (i.e. Set-Point 60° F: ON @ 50° F, OFF @ 70° F).

NOTE: AGF does not recommend setting the thermostat below 60° F.

Power consumption of the M5450 is based on several factors including ambient temperature, humidity, installation location, and exposure to sunlight. The following graph shows an estimation of the daily energy consumption versus ambient temperature when the set-point is 60° F.



The M5450 features a thermometer on the cabinet door for measuring the ambient temperature inside the unit. This thermometer is for checking the operating status of the internal heater. The reading on the thermometer, based on its location in the cabinet, may range from 40° to 120° F, depending on when in the heater's cycle the thermometer is checked.

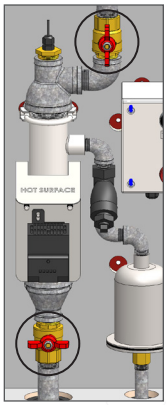
The system uses a float-style level switch to monitor the collected condensate. This Float Switch is tied back to the NEMA 4 Alarm Panel. In the event the Drain Trap plumbing becomes obstructed and enough condensate accumulates, the Float Switch will be activated. This will trigger the alarm to sound and the alarm light to blink. The activation of the alarm and light indicates that the M5450 needs to be emptied and that there is a possible obstruction in the Drain Trap Y-Strainer or plumbing that needs to be investigated. A normally open auxiliary contact is also triggered and is capable of being wired back to a Remote Panel. The Float Switch is automatically reset when the water level is drained below the switch.

The M5450 is equipped with a "TEST" button to confirm that the Alarm Panel is functioning properly. When pressed, the "TEST" button causes the local alarm to sound and the alarm light to blink, and, if utilized, the auxiliary contact to alert the Remote Panel.

The M5450H is equipped with a Heater Operation Trouble (HOT) Monitor that verifies the performance of the heater. In the event the cabinet door has been left open or the heater is not keeping up with the temperature demand, the HOT Monitor will cause the local alarm to sound and the alarm light to blink, and, if utilized, the auxiliary contact to alert the Remote Panel.

To Collect Condensate per NFPA 25:

1. Open the cabinet door using the supplied keys.
2. Close the Drain Valve (lower valve).
3. Install the 1" Pipe Cap onto the pipe at the bottom of the cabinet.
4. Open the Supply Valve (upper valve).
5. Close and lock cabinet door using the supplied keys.



COLLECT

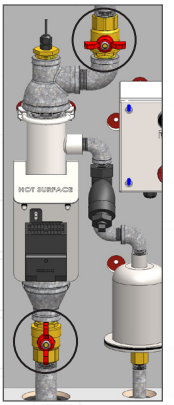
To Drain Condensate per NFPA 25:

NOTE: This procedure will only drain condensate from the main collection assembly. A small amount of residual water may remain in the Drain Trap.

1. Open the cabinet door using the supplied keys.
2. Close the Supply Valve (upper valve).
3. Remove the 1" Pipe Cap from the pipe at the bottom of the cabinet.

NOTE: Hold the pipe secure with a wrench when removing the Pipe Cap to prevent the pipe or other plumbing from unthreading.

4. Open the Drain Valve (lower valve) and drain the main collection assembly.
5. Once all the water has been drained, close the Drain Valve.
6. Open the Supply Valve (upper valve) and allow time for any additional water to accumulate.
7. Repeat the drain process until all the water has been drained.
8. Once all the water has been drained, follow steps 2 through 5 of the "TO COLLECT CONDENSATE" instructions on pg. 8.



DRAIN

MAINTENANCE INSTRUCTIONS

Maintenance is the cornerstone to keeping any system operating correctly and efficiently. It is the building owner's responsibility to ensure that the M5450 has been drained, that the heater and alarm are working properly, and that the screen of the Y-Strainer is clean and free of obstructions. Failure to drain condensate from the system or conduct regular testing and maintenance could result in system failure due to freezing. System must be maintained per NFPA 25.

It is especially important that functional testing of the heater and inspection of the Y-Strainer's screen be performed before the start of the winter season or when temperatures begin to approach freezing conditions.

Verify Alarm Operation:

Push and hold the "TEST" button on the Alarm Panel for five seconds to verify that the alarm sounds and the alarm light blinks.

Inspect the Y-Strainer Screen:

1. Drain condensate from the main collection assembly following steps 1 through 4 in the "TO DRAIN CONDENSATE" section.

IMPORTANT: DO NOT reopen the supply valve until further instructed.

2. Remove the hex cap from the Y-Strainer body using a wrench. A second wrench may be needed to prevent the Y-Strainer from turning.

NOTE: Have a small cup ready to capture any residual water that may drain from the Y-Strainer hex cap.

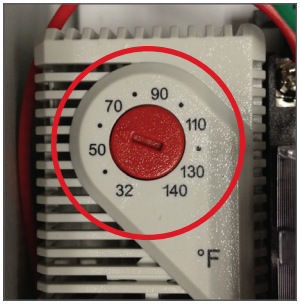
3. Remove the screen from the body of the Y-Strainer. Inspect and clean, as necessary.
4. Reinstall the screen and tighten the hex cap.
5. Close the Drain Valve and install the 1" Pipe Cap on the pipe at the bottom of the cabinet.

6. Open the Supply Valve and check for any leaks.
7. Close and lock the cabinet using the supplied keys.

M5450

Verify Heater Operation:

CAUTION: Always take the necessary precautions when entering the Alarm Panel when 120V power is present.

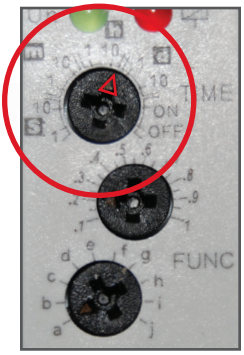


1. Loosen the four screws on the front of the Alarm Panel and carefully remove the cover.
2. Take note of the current thermostat set-point. **Thermostat Set-Point**_____
3. Turn the Thermostat clockwise until the heater turns on.
4. Reset the Thermostat to the previous set-point.
5. Install the Alarm Panel cover and tighten the screws.

M5450H

Verify Heater and Hot Monitor Operation:

CAUTION: Always take the necessary precautions when entering the Alarm Panel when 120V power is present.



1. Loosen the four screws on the front of the Alarm Panel and carefully remove the cover.
2. Take note of the current thermostat set-point. **Thermostat Set-Point**_____
3. Take note of the current Time Band (top dial) **NOTE:** The leg of the cross with the arrow points to the band. **Time Band**_____
4. Turn the top dial to the **10s** band.
5. Turn the Thermostat clockwise until the heater turns on.

NOTE: The alarm will sound a few seconds after the heater turns on.

6. Reset the Thermostat to the previous set-point.
7. Reset the Time Band (top dial) to its previous setting **NOTE:** The leg of the cross with the arrow points to the band.
8. Install the Alarm Panel cover and tighten the screws.

Change Timer Setting (M5450H ONLY):

NOTE: It is the owner's responsibility to set the timer based upon the climate conditions of the installed location. The default setting of 2 hours is adequate for outside temperatures down to 0° F.

1. Disconnect power to the M5450.
2. Loosen the four screws on the Alarm Panel and carefully remove the cover.
3. Turn the middle dial to the desired number of hours, the leg of the cross with the arrow (highlighted in red) indicates the setting.

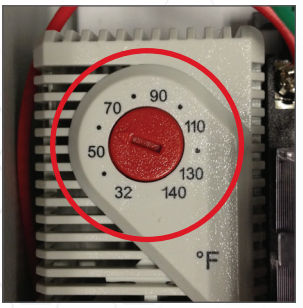
IMPORTANT: Unless you are testing the system changing the top dial Time Band from **10h** is not recommended. The bottom dial should NEVER be changed from the **"a"** setting.

4. Take note of the new Timer set-point
   Timer Set-Point_____
5. Install the Alarm Panel cover and tighten the four screws.
6. Restore power to the M5450H.
7. Verify power by pressing and holding the "TEST" button.

Change Thermostat Setting:

NOTE: It is the owner's responsibility to set the thermostat based upon the climate conditions of the installed location. The default setting of 60° F (the dot between 50 & 70) is adequate for outside temperatures down to 0° F. If operating below this temperature the set-point should be increased. Consult AGF for set-point guidelines.

1. Disconnect power to the M5450
2. Loosen the four screws on the Alarm Panel and carefully remove the cover.
3. Turn the Thermostat clockwise or counterclockwise to the desired setting.
4. Take note of the new thermostat set-point.
   Thermostat Set-Point_____
5. Install the Alarm Panel cover and tighten the four screws.
6. Restore power to the M5450H.
7. Verify power by pressing and holding the "TEST" button.



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