Encon®
SAFETY PRODUCTS

Therma-Flow® PLUS

Installation, Operation, and Maintenance Manual

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WARRANTY

WITH RESPECT TO Therma-Flow® (THE "EQUIPMENT") ENCON HEREBY DISCLAIMS ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, EXCEPT AS HEREAFTER PROVIDED.

ENCON warrants the Equipment to be free of defects in material and workmanship if properly installed, cared for and operated under normal conditions, with competent supervision, and in accordance with ENCON's installation, operating and maintenance instructions. With respect to the Equipment, ENCON's only obligation under this warranty is to repair or replace such components of the Equipment:

1. As proved defective and ENCON is so advised within one year after shipment, and
2. Shall appear to ENCON's satisfaction to have been defective in material or workmanship.
3. Encon Safety Products will request completion of a Service Authorization Agreement by an Authorized employee of the customer prior to on site inspection by Encon personnel of the warranty claim.

However, in no event shall ENCON be liable under this Warranty unless ENCON is provided an opportunity to inspect such material or workmanship and, at its option, allowed to repair or replace such material or workmanship.

No warranty is given in connection with any portion of the Equipment, which is altered or rebuilt without ENCON's express written consent.

ENCON shall not be liable for loss, damage, or expense, arising directly, or indirectly, as a consequence of use of the equipment with other products, or from any other cause, other than ENCON's obligation to repair or replace defective components of the Equipment as expressly provided in this warranty statement.

THE CUSTOMER'S PURCHASE AND ACCEPTANCE OF THE EQUIPMENT SHALL BE DEEMED TO BE ITS AGREEMENT TO BE BOUND BY THE TERMS AND PROVISIONS OF THIS WARRANTY.

Under no circumstances will ENCON ever be liable for indirect or consequential loss or damage arising out of the ownership or use of the Equipment.

The terms of this Warranty shall apply to any replacement parts installed on, or furnished in connection with the Equipment.

CONTACT INFORMATION

Contact Encon Safety Products (Encon) for inquiries, customer service, or suggestions.

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1 OVERVIEW

1.1 About this Manual

This manual describes the installation, maintenance, and operation of your Therma-Flow® Plus emergency shower and eyewash. Therma-Flow® Plus systems are configured with many different features and components depending on your requirements. This manual attempts to cover all possible configurations including your model. The drawings and schematics in manual are for reference only and apply to most models. However, some models may differ according to your customer requirements. If you have questions that are not addressed in the manual, contact Encon Customer Service (see “Contact Information” on page iii).

1.2 About Therma-Flow® Plus

Therma-Flow® Plus is a freeze protected emergency shower and eyewash that meets or exceeds the American National Standards Institute Standard Z358.1 for emergency shower and eyewash equipment.

The shower and eyewash station is enclosed in an insulated fibre-reinforced plastic (FRP) building.

Key features of Therma-Flow® Plus include:

- 20 GPM (75.7 LPM) shower and 3.2 GPM (12.1 LPM) eyewash
- Drench hose.
- Double swinging door entrance.
- Floor grate and drain pan.

  Optional features include:

  — Freeze and scald protection valves.

  — Various alarm packages.

  — Various electrical classifications.

  — Heat trace cable and thermostat to keep the water temperature above (55º F/12.7º C) and freeze protect the piping system.

  — Internal enclosure heater keeps the user warm and freeze protects the equipment.

2 INSTALLATION

2.1 Installation Steps

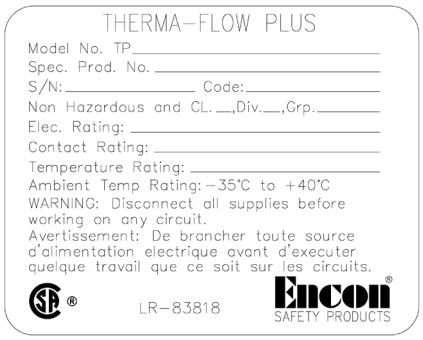
Complete these steps to install Therma-Flow® Plus as described in this section.

1. Ensure the installation requirements are met.
2. Unpack and secure the unit.
3. If applicable, connect the drain.
4. Connect the water supply.
5. If applicable, install the area locator and alarm lights.
6. Connect the electrical supply.
7. Adjust the enclosure doors.

2.2 Installation Requirements

Ensure the following requirements are met before installing Therma-Flow® Plus:

- **Location** — The foundation must be level and capable of supporting 2.5 psi load. Ensure the location has enough space to fit the unit. Ensure the placement of the unit is such that the area meets the latest American National Standards Institute Standard Z358.1 for emergency shower and eyewash equipment.
- **Water Supply** — Your facility must have an uninterrupted supply of potable water with an 1¼" or 1½" NPT inlet to the unit. The water supply pressure must be 30 PSI (206.8 kPa) minimum and 80 psi (551.58 kPa) maximum.
- **Drain** (if applicable) — Minimum 4" O.D. drain to accommodate 30 GPM (113.5 LPM) discharge.
- **Electrical** — A 120 or a 240 VAC single-phase electrical connection is required. Ensure the electrical classification matches the area classification (for example, Class I, Div 2). The voltage and the electrical classification specified on your system can be found on the Encon® label located on the main Junction Box.



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WARNING: *Never alter or modify the certified construction of Therma-Flow® Plus or its components, or bypass any safety features.*

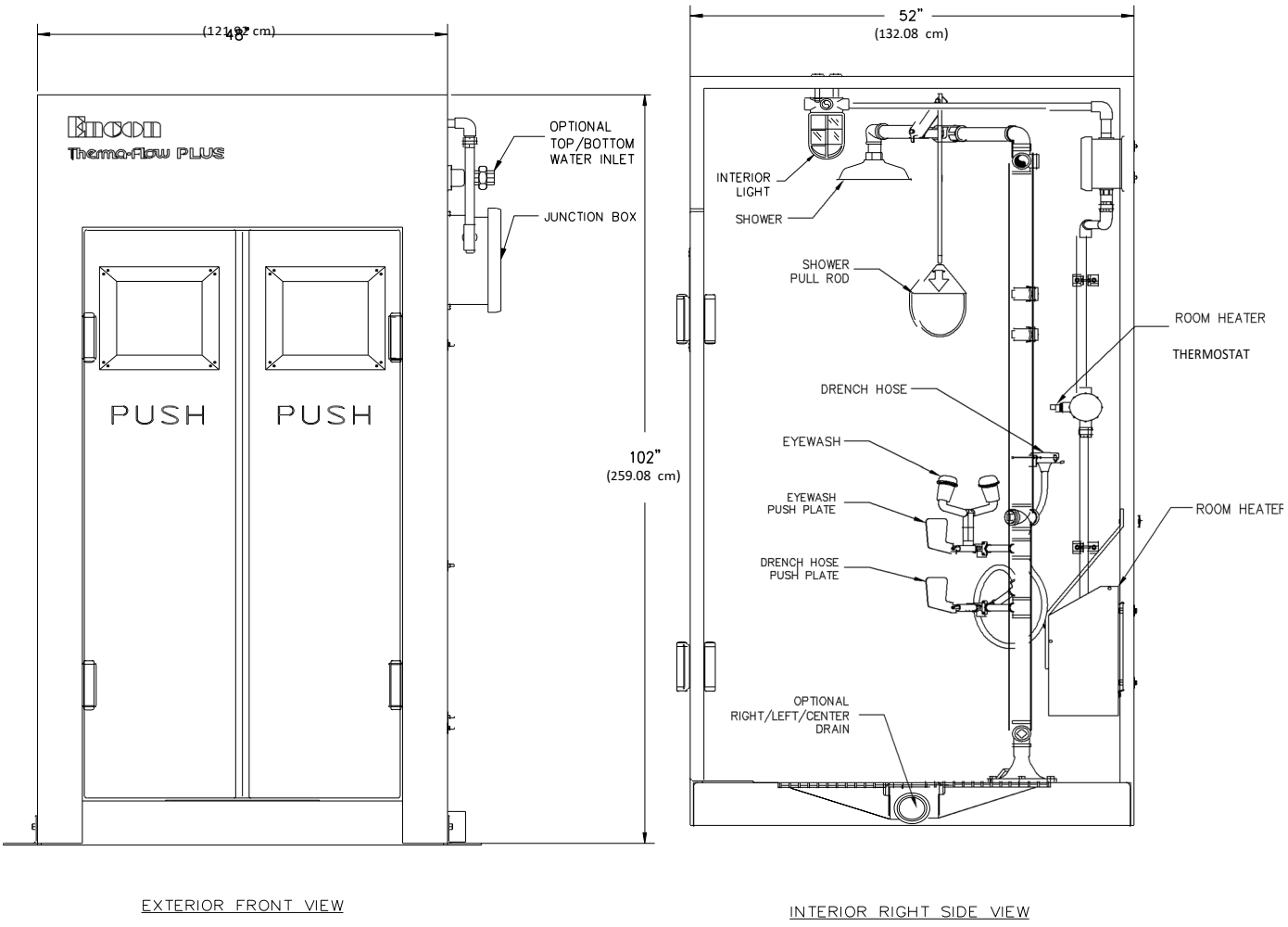

Figure 2-1. Therma-Flow® Plus Shower and Eyewash

2.3 Unpacking and Securing the Unit

Upon receipt of the equipment, verify the packaging and unit are received in good order. Inspect the pipe connections and electrical unions to ensure they are securely connected. Vibrations during shipment can loosen the pipes and electrical fittings.

Using a forklift, lift the unit from the rear (opposite the shower room doors). The load must be balanced and transported low to the ground. Use care to prevent damage to decals or hardware on the unit.

If you are lifting the unit with a cherry picker or crane, spreader bars and slings are recommended to prevent cracking the side walls.

To unpack and secure the unit:

1. Remove the ½" lag bolts from the mounting brackets that were used to secure the unit to the wooden pallet.
2. Using a forklift, carefully insert the forklift prongs between the wooden skid runners and lift the building off of the wooden pallet.
3. Place the building at the desired location for installation. Set the unit on a pad, structural grate, or other suitable surface. Carefully and slowly remove the forklift prongs.
4. Bolt the unit down using U-clamps (steel grate) or bolts (concrete) through the pad eyes.

2.4 Connecting the Drain

Therma-Flow® Plus may require a drain pipe that will accommodate a 3” I.D. PVC drain fitting extension for Right or Left Drain, or a 3” I.D. or 4” O.D. for a Center Drain.

An external drainage system should be designed for a zero PSI drop gravity drain with a 30 GPM (113.5 LPM) flow rate.

Ensure the drain connection is:

- Free flowing.
- Freeze protected (if applicable to the environment).
- Meets local and federal codes regarding water drainage.

Also consider that the water runoff may contain a substance or material which may have the potential to cause harm to the environment. Choose an appropriate location to drain the runoff according to the type of hazard being irrigated.

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2.5 Connecting the Water Supply

It is recommended you use potable water as the water supply. Encon® provides the union connections to connect your water supply according to your specifications.

A minimum pressure of 30 PSI (206.8 kPa) at the input should assure proper water flow pattern from the shower head. The input pressure cannot be more than 80 PSI (551.5 kPa).

The water supply pipe must be sized to provide at least 30 GPM (113.5 LPM) water flow. The supply pipe connected to Therma-Flow® Plus must be either of the same material or of a material compatible with that of the unit to avoid corrosion. The use of dissimilar metals in the supply pipe should be avoided as this could cause corrosion throughout the system. Steel pipe or cast iron fittings should not be used unless they are galvanized or otherwise protected from corrosion by potable water.

To connect the water supply to Therma-Flow® Plus:

1. Flush the water supply piping to remove pipe thread (metallic particulate which may become stuck in flow switch or eyewash orifice) or calcium carbonate from the supply line.
2. It is strongly recommended you install a strainer with a clean-out valve in the supply line. Ensure the strainer-drain connection is free flowing and freeze protected (if necessary).
3. It is recommended that you include an isolation valve on the supply pipe in an accessible position to shut off the water supply during maintenance. The isolation valve should have locking mechanisms to prevent unauthorized shutoff and should be labelled accordingly.
4. Connect the water supply to the Therma-Flow® Plus union connections. If your unit includes an underground extension, connect the water supply to the extension (see “Figure 2-2. Underground Extension With and Without Flow Switch.” on page 2-5).

2.6 Installing Area Locator and Alarm Lights (if applicable)

Your unit may have area and alarm light fixtures. These lights help a user locate the emergency station and provide constant illumination inside the unit. Typically, light bulbs are not shipped with the unit by Encon®. However, the glass globe (clear, green, blue, or red) and protective light guard are shipped with the unit and require installation. Install the bulbs into the exterior and interior light fixtures, then install the color or clear glass globe over the bulb by screwing it into the fixture grooves. Install the protective light guard over the globe by screwing it into the fixture grooves. See “Figure 2-3 Typical Light Fixture” on page 2-5.

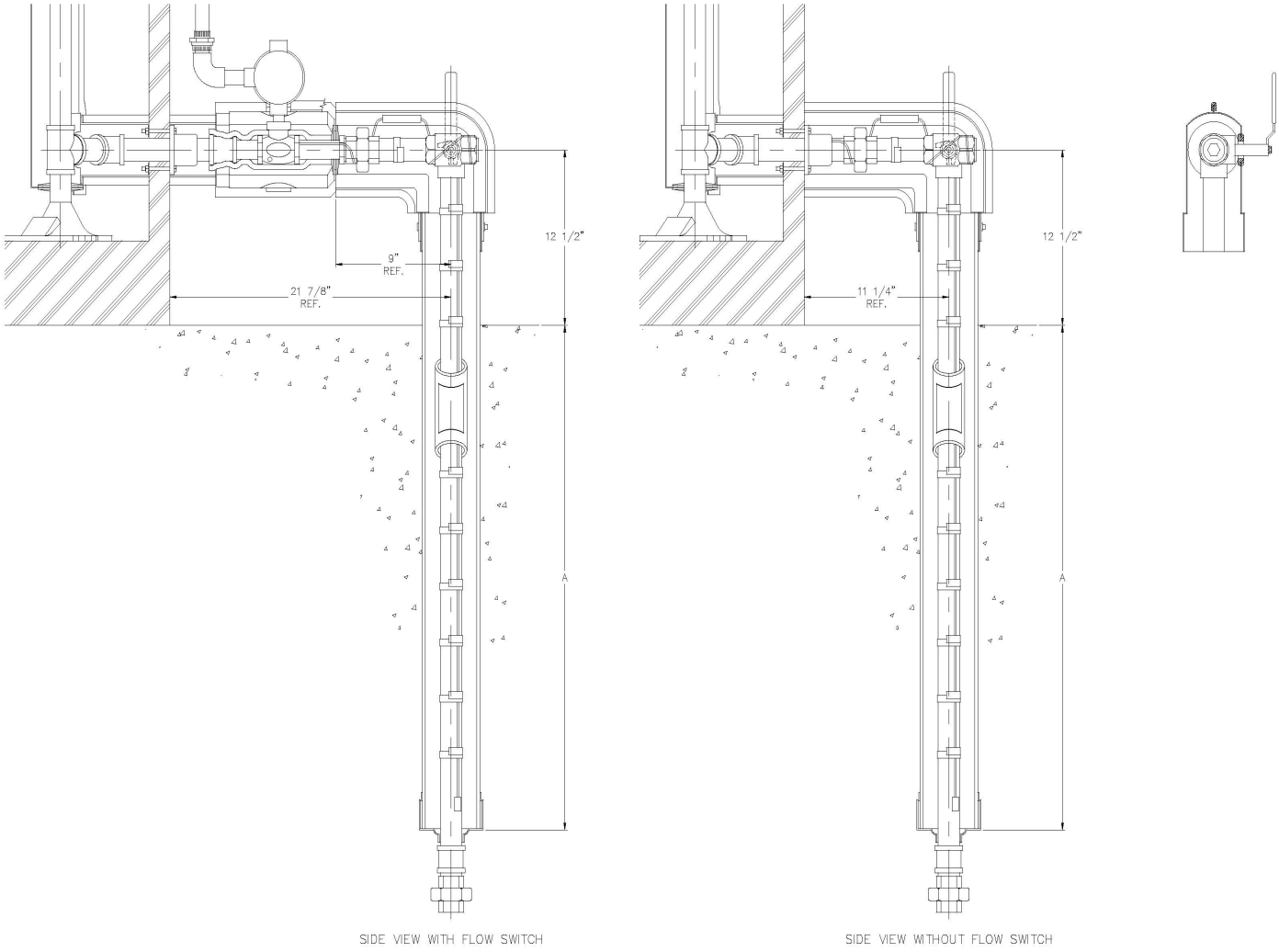

Figure 2-2. Underground Extension With and Without Flow Switch

Figure 2-3. Typical Light Fixture

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2.7 Connecting the Electrical Power Supply

Refer to your local, state, provincial or federal regulations for the proper grounding and electrical power connection.

CAUTION: Do not connect power prior to water connection (see “2.5 Connecting the Water Supply” on page 2-4).

To connect electrical power to the Therma-Flow® Plus:

1. Switch off the main electrical power supply.
2. It is highly recommended you install a circuit breaker at the electrical power source for the incoming supply.
3. Insert the electrical power supply wires into the junction box and connect them to the positive, negative, and neutral (ground) wires. Refer to the typical electrical schematics Figure 2-4 or 2-5 on pages 2-7 and 2-8 to make the proper connections.
4. Secure the electrical power supply inlet wires at the junction box fitting.
5. Switch on the main electrical power supply and test the unit. For more information, see section “3 Operation and Testing” on page 3-1.

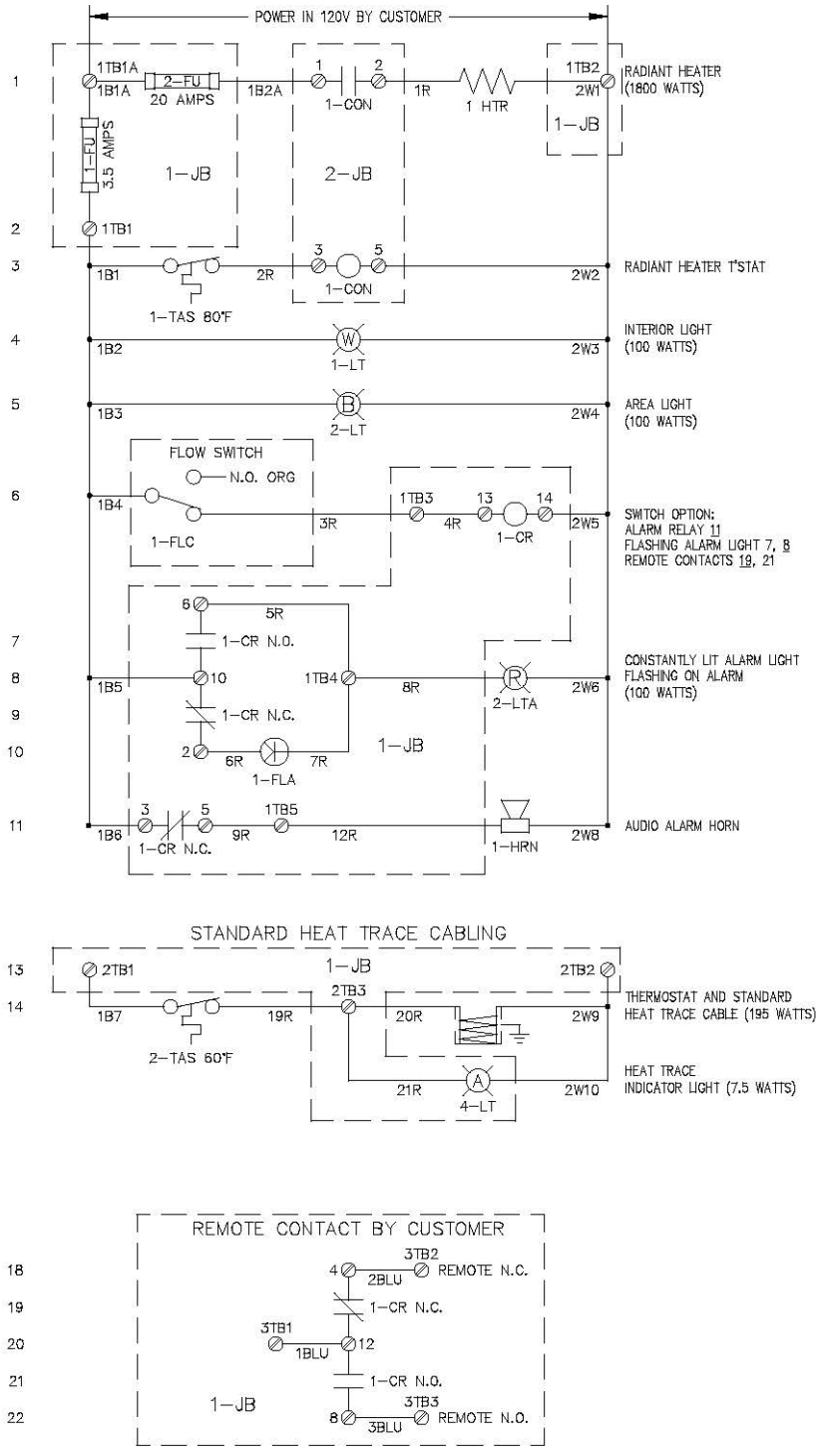

Figure 2-4 Electrical Schematic - Typical Therma-Flow® Shower with Flow Switch Alarm and Enclosure Heater (120 Volt System)

Note: Options may vary, please refer to Electrical Schematic for your model.

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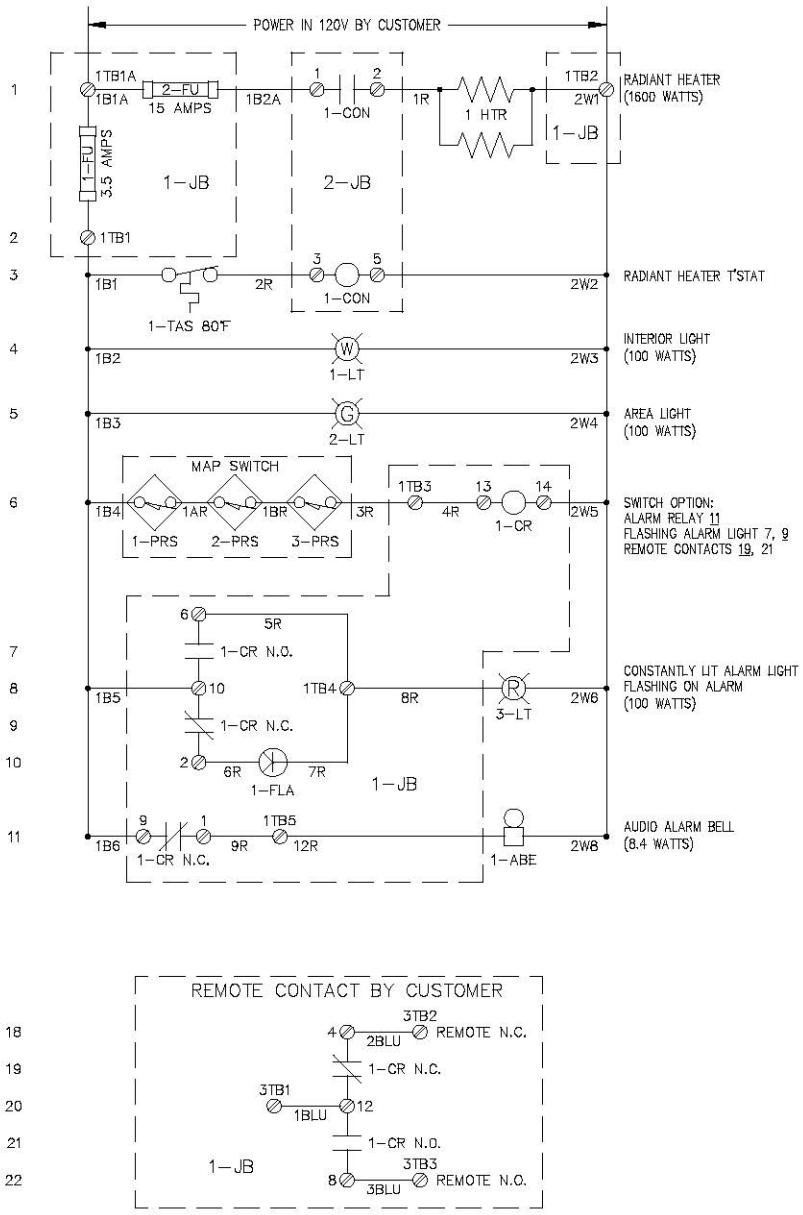

Figure 2-5 Electrical Schematic - Typical Galvanized Shower with MAP® Switch Alarm and Enclosure Heater (120 Volt System)

Note: Options may vary, please refer to Electrical Schematic for your model.

2.8 Adjusting the Enclosure Doors

Before shipping the unit to your location, Encon® sets the door springs to maximum tension to prevent damage to the enclosure. You can adjust the spring tension so that the doors will open and close easily. When you adjust the doors, ensure they remain closed and there is enough resistance to prevent the wind from opening them.

To adjust the door spring tension:

1. Insert a tension rod or 1/8” spring steel in the tension hole of the double acting hinge.
2. Tighten the spring tension so that you can remove the tension pin.
3. Using the tension rod or drill bit, rotate the hinge in the direction of the arrow as shown in Figure. 2-6. When you get the desired tension, re-insert the tension pin and remove the tension rod or drill bit.
4. Repeat the procedure on all eight (8) adjustment points (four per door).

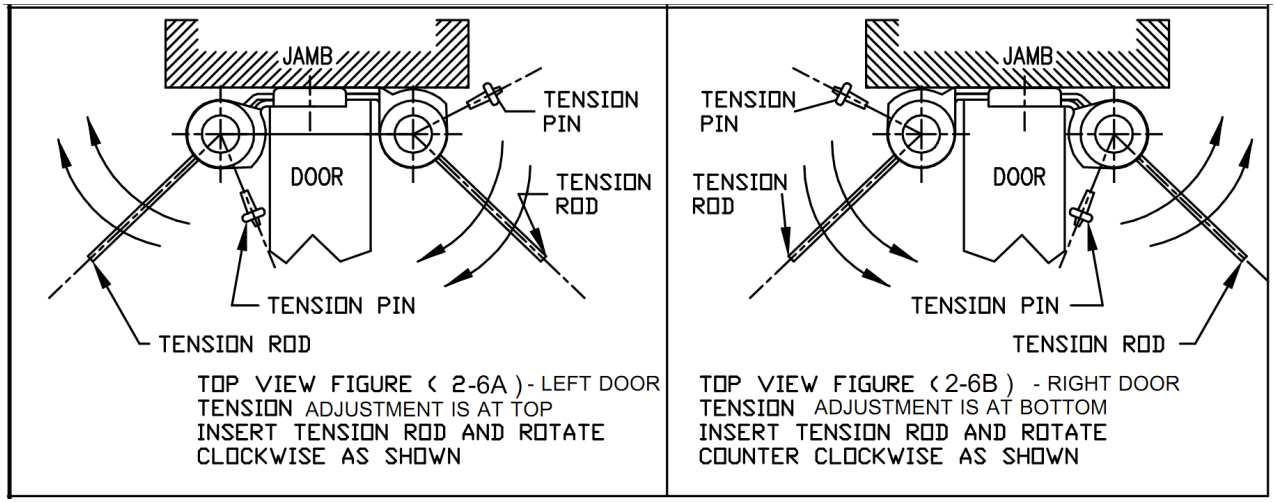

Figure 2-6. Setting the Door Hinge Tension.

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3 OPERATION AND TESTING

3.1 Testing Therma-Flow® Plus

To perform a visual and operational inspection, complete the test items found in the Therma-Flow® Plus Inspection Report form on page 3-4.

CAUTION: When using the Therma-Flow® Plus, the water may cause a slip hazard in indoor installations and freezing slip hazards in outdoor installations.

3.2 Actuating and Stopping the Eyewash and Shower

The following procedures will operate the alarms (if applicable). If applicable, notify the control room personnel that the alarms will operate due to testing. For more information, see “4.9 Alarms (optional)” on page 4-14.

To actuate and stop the eyewash water flow:

1. To start the water flow, push down on the push plate or foot pedal (if applicable).
2. To stop the water flow and alarms (if applicable), pull the push plate to its original position.

CAUTION: Ensure the shower ball valve is completely closed. If it is allowed to drip, it may freeze.

To actuate and stop the shower water flow:

1. Pull down on the pull rod.
2. To stop the water flow and alarms (if applicable), push up on the pull rod to its original position

CAUTION: Ensure the eyewash ball valve is completely closed. If it is allowed to drip, it may freeze.

3.3 Testing the Eyewash

To test the eyewash:

1. Actuate the eyewash and check the eyewash flow pattern by inserting the eyewash tester (Encon part number 01110469) into the dual stream eyewash. The stream should meet the pattern design on the tester when lowered not more than 1½" (38.1 mm) from the point of initial contact. If the test fails, you may need to remove the eyewash to remove an obstruction. For more information, see “4.4 Dismantling and Reassembling the Eyewash and Drench Hose” on page 4-3.
2. If applicable, ensure the alarms operate as designed.
3. Stop the water flow by pulling the push plate to its original position.
4. Ensure the eyewash completely drains. The three-way self draining eyewash requires 30 to 90 seconds to completely drain. Dripping from the bottom port at this time is normal.
5. Reinstall the covers on the eyewash nozzle to prevent debris from entering the eyewash nozzles. The covers also prevent shower water from entering the heads and potentially freezing inside the eyewash.
6. Inspect the eyewash activation devices by doing the following:

   a. Ensure they are securely fastened to the valve stem of the ball valves. b.

   The valves must open and close in one second or less.

   c. The valves must be drip free.

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CAUTION: In freezing conditions, do not cover the eyewash nozzles until draining is complete. If you put the covers on prematurely, the covers may freeze and seal the eyewash heads to create a vacuum. As a result, the water cannot drain and may freeze inside the eyewash.

3.4 Testing the Shower

To test the shower:

1. Open the shower valve and observe the water spray for the following:
   a. Ensure the water is clear.
   b. Ensure the pattern of water spray is a minimum 20" (508 mm) diameter pattern from the shower head and 60" (1524 mm) at standing level. If the test fails, you may need to remove the shower head to remove an obstruction.
2. If applicable, ensure the alarms operate as designed.
3. Stop the water flow and alarms (if applicable) by pushing up on the pull rod to its original position
4. Inspect the shower activation devices by doing the following:
   a. Ensure they are securely fastened to the valve stem of the ball valves.
   b. The valves must open and close in one second or less.
   c. The valves must be drip free.

3.5 Therma-Flow® Plus Inspection Report

DATE _____

AREA _____ MODEL NUMBER _____

TAG NUMBER _____ SERIAL NUMBER _____

I. VISUAL INSPECTION

	OK	NO
UNIT VISIBILITY		
ENCLOSURE PROVIDES A MIN. UNOBSTRUCTED AREA OF 34" (86.4 cm) IN DIAMETER		
AREA FREE OF DEBRIS (Within 10 seconds from hazard, Out of potential spray path)		
AREA LIGHT/ALARM LIGHT/INTERIOR LIGHT		
SIGN CONDITION		
EYEWASH COVERS ATTACHED AND IN PLACE ON NOZZLES		
SHOWER POSITIONED TO PROVIDE FLUID PATTERN HEIGHT AT MIN. 82" – MAX. 96" FROM STANDING LEVEL		
EYEWASH (Min. 33" – Max. 45" from standing level and min. 6" from nearest obstruction)		
VALVES (❑ Leaking: ___Eyewash ___Shower ___Drench Hose)		
ACTUATORS EASILY LOCATED AND READILY IDENTIFIABLE		
PULL ROD NO GRATER THAN 69" FROM STANDING LEVEL		
INSULATION AND COVERS (❑ Adjustment ❑ Replacement)		
HEAT TRACE INDICATOR LIGHT (❑ On ❑ Off) — if applicable		
FREEZE / SCALD PROTECTION VALVES (❑ Leaking: ___F.P. Valve ___S.P. Valve)		

II. OPERATIONAL INSPECTION

	OK	NO
SHOWER VOLUME (Min. 20 gpm / 75.7 lpm)		
SHOWER PATTERN TEST (20" diameter pattern 60" from standing level)		
SHOWER VELOCITY, NONINJURIOUS TO USER (❑ Too High ❑ OK)		
EYEWASH VOLUME (Min. 0.4 gpm / 1.5 lpm)		
EYEWASH PATTERN TEST		
EYEWASH VELOCITY, NONINJURIOUS TO USER (❑ Too High ❑ OK)		
STAY OPEN VALVES "OFF" TO "ON" IN ONE SECOND OR LESS COMPONENTS		
OPERATE SIMULTANEOUSLY TO ANSI REQUIRMENTS		
ALARM TEST Local: Shower ❑ OK ❑ No; Eyewash ❑ OK ❑ No; Drench Hose ❑ OK ❑ No		
Remote: Shower ❑ OK ❑ No; Eyewash ❑ OK ❑ No; Drench Hose ❑ OK ❑ No		
SUPPLY WATER PRESSURE (Min. 30 psig / 207 kPag): _____		
WATER TEMPERATURE (78° to 92°F / 25.6° to 33.3°C): _____		

Comments: _____
Corrective action required to the shower/shower parts to place unit in operational readiness state:
Action required other than to the shower/shower parts to correct operation:

Report sent to: ❑ Maintenance for action ❑ Record keeping

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4 MAINTENANCE AND REPAIR

4.1 Scheduling Maintenance

It is recommended that you flush the unit at least once a week by running the eyewash and shower. It is also recommended that you routinely complete the checklist items in the “3.5 Therma-Flow® Plus Inspection Report” on page 3-4.

Also, at least once a year, the freeze and scald protection valves (if applicable) should be removed and tested by cycling water through them. For complete instructions on this procedure, see “4.6 Freeze and Scald Protection Valves” on page 4-9.

4.2 Removing and Replacing ABS Covers to Access Components (if applicable)

If a Therma-Flow® shower is present, the internal components are under ABS plastic covers that help to freeze protect the system (see Figure 4-1 on page 4-2). The ABS covers are divided into segments so that you can easily remove them to access the components for repairs.

The covers are held together by closure strips compressed at the flange area of the cover. The closure strips are adjustable and can be opened using a blade screw- driver and reinstalled by using pliers to compress them. The compo-nents that pass through the removable covers are sealed with synthetic rubber seals (grommets) that keep out water, gases, and moving air (a very important feature to maintain freeze protection).

To remove the ABS covers:

1. Pull the neoprene (black) closure strips away from the flanged edge of the covers.
2. Separate the covers at the segment line (gasket sealed at time of manufacture) and remove them.
3. All items protruding through the covers, such as the eyewash yoke and push plate(s), must be physically removed from the shower unit prior to cover removal. For more information, see “4.4 Dismantling and Reassembling the Eyewash and Drench Hose” on page 4-3.

Inspect the covers to ensure nothing is missing or broken and replace as required.

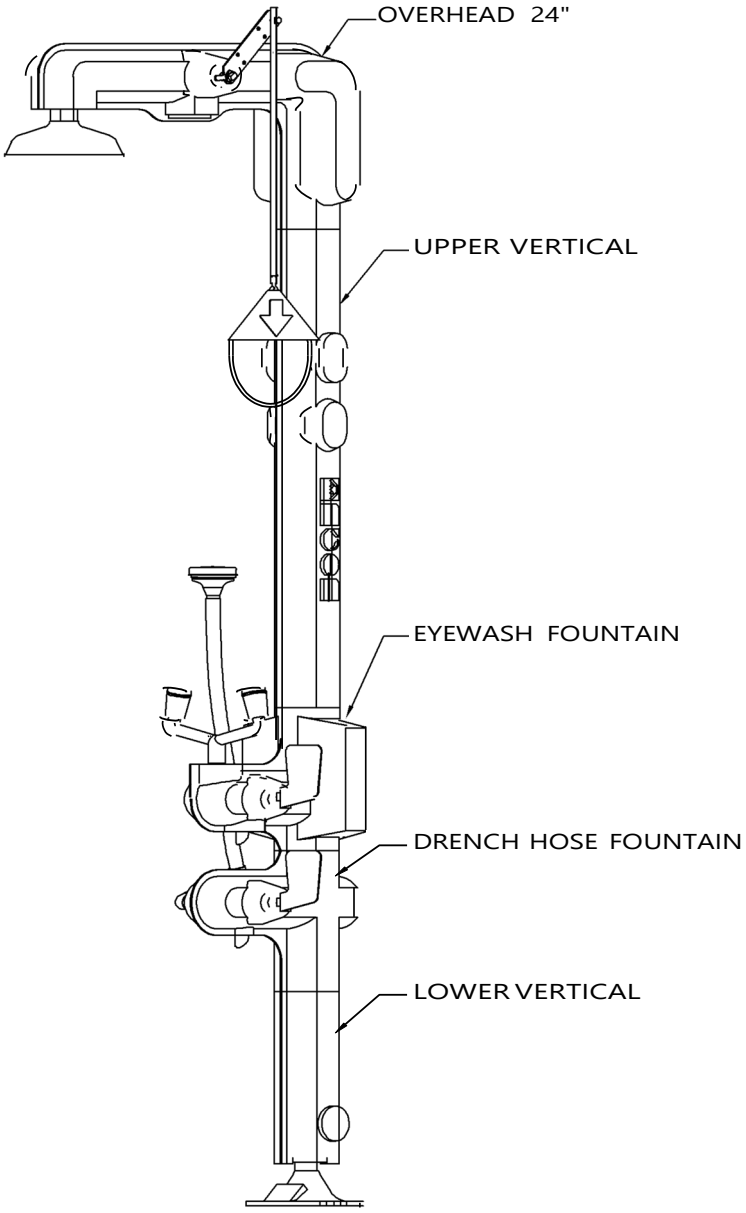

Figure 4-1. Therma-Flow® Plus ABS Cover Assembly

To inspect the covers:

1. Inspect the ABS covers and ensure they are not cracked and intact to maintain thermal integrity of the unit.
2. Inspect the closure strips and seals and ensure they are tight.
3. Make sure all grommets that seal the protrusions are in place and secure. Dead air space is essential to keep the unit freeze protected.

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4.3 Relieving Fluid and Pressure from the System for Plumbing Repairs

In all procedures where you need to replace a plumbing component, you must relieve pressure in the system before removal as described below.

To relieve pressure in the Therma-Flow® Plus:

1. Close the water supply valve.
2. Open the eyewash or shower to remove all fluid and pressure from the system. For more information, see “3.2 Actuating and Stopping the Eyewash, Drench Hose and Shower” on page 3-1.

4.4 Dismantling and Reassembling the Eyewash and Drench Hose

A. Complete the following procedure to access the heat trace cable (if applicable) and ball valves.

To dismantle the eyewash and drench hose:

1. Switch off the electrical power supply.
2. Relieve fluid and pressure from the system as described in “4.3 Relieving Fluid and Pressure from the System for Plumbing Repairs” on page 4-3
3. Eyewash: Remove the eyewash yoke by holding it at the wye and turning it counter clockwise (see Figure 4-2).
4. Drench Hose: With a suitable wrench, remove the gray ½” PVC elbow ensuring that the horizontal PVC nipple entering the cover through the rubber grommet remains in place. The PVC nipple will act as a locator for the covers during reinstallation (see Figure 4-2).

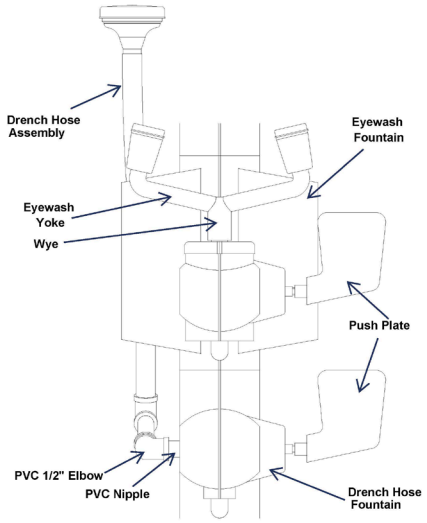

Figure 4-2. Eyewash and Drench Hose Fountain Sections

5. Remove the push plate hex head bolt and remove the push plate.
6. Start from the bottom, pull the black closure strip away from the flanged covers (past the segmentation lines) exposing the eyewash and drench hose assembly covers. The overlay is required to maintain a moisture proof barrier.
7. Pull the covers out and away from the eyewash over the ball valve extension. Should the black grommets drop out of the covers reinsert the grommets after the covers are pulled off the shower.

CAUTION: Be careful in the next step and do not cut the heat trace cable.

---

8. With a suitable knife, remove the neoprene insulation self- adhering seal strip.
9. Pull back the insulation. The insulation can be reused if it is removed undamaged.
10. If the valve packing requires adjustment, it may be done at this time.
11. To remove the ball valve, do the following:
    a. Use a knife to cut the fiberglass bonding tape that holds the heat trace cable to valve and pipe. **Be careful; do not cut the outer jacket of the heat trace cable.**
    b. Pull the heat trace cable over the end of the elbow and lay cable away from pipe.
    c. The valve can now be removed for inspection and repair as required. For more information, see “4.5 Ball Valves” on page 4-5.

To re-assemble the eyewash and drench hose:

1. Replace the heat trace cable in reverse order of removal. Ensure the cable does not interfere with the ball valve extension or the stops on the valve body.
2. Replace the fiberglass-bonding tape. Ensure there is as much physical contact (cable to pipe) as possible. Fiberglass cloth tape is recommended. Do not use electrical or duct tape.
3. Reinstall the neoprene insulation and tape insulation closed. Ensure there are no exposed metal parts. Ensure the insulation does not impede valve closure.
4. Reinstall the covers. Install the top cover first by sliding one half of the cover up and then over the ball valve extension and eyewash nipple.
5. Reinstall the black seal strip on front and back of shower. Seal strip can be adjusted by crimping with pliers if too loose (prior to attachment to covers), or separated if too tight, by inserting screwdriver and opening up seal strip.

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6. Reinstall the ball valve extension, push plate and hex head bolt. Do not use PTFE tape.
7. With a suitable wrench, reinstall grey PVC elbow (drench hose assembly).
8. Reinstall eyewash wye by hand tightening.

   Note: This is a non-pressure containing part and is sealed with a rubber gasket. Hand tight is more than adequate to prevent leaks.

4.5 Ball Valves

Complete the following procedure if a ball valve is leaking.

To maintain the ball valves:

1. If applicable, remove the covers, insulation, and heat trace cable as described in “4.2. Removing and Replacing ABS Covers to Access Components” on page 4-1.
2. Adjust the packing gland by tightening the packing gland and/or repack the valve as required.
3. Should the valve leak by the seals, remove it from the pipe and disassemble the valve as described in “4.5.1 Eyewash Ball Valve” on page 4-6. Inspect the seals for debris permeation and the ball for scoring. Refer to “6 Spare Parts” on page 6-1 for Ball Valve Repair Kit.

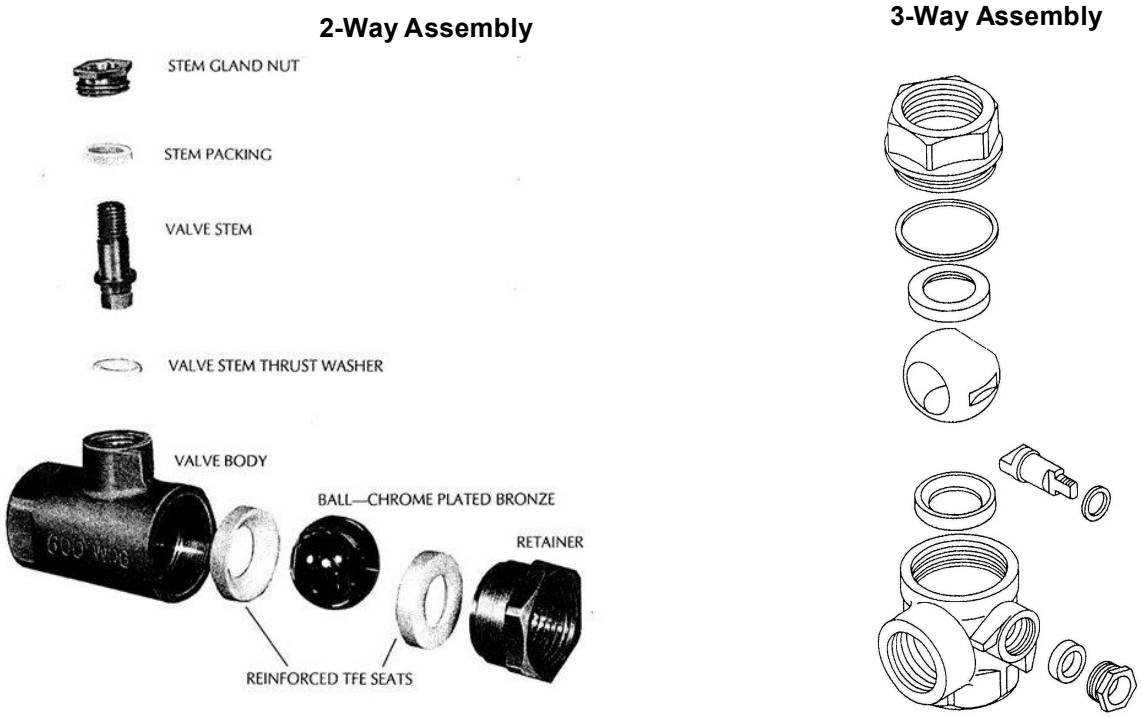

Figure 4-3. Ball Valve Assembly — 2-Way and 3-Way

4.5.1 Eyewash Ball Valve

To remove and replace the eyewash ball valve:

1. Switch off the electrical power supply.
2. Relieve fluid and pressure from the system as described in “4.3 Relieving Fluid and Pressure from the System for Plumbing Repairs” on page 4-3.
3. Remove the black seal strips from eyewash covers and save them for reinstallation.
4. Remove push plate hex head bolt.
5. Remove the push plate.
6. Remove eyewash covers and save them for reinstallation.
7. Remove the extension grommet and valve extension sleeve and unscrew the valve extension from valve stem and valve stop. Save for reinstallation. Discard, if replacing with Valve Extension Kit (P/N 01052515 or 01052544).
8. Remove the eyewash ball valve by doing the following:
   a. Use a pipe wrench to hold the eyewash supply pipe.
   b. Use another pipe wrench to unscrew and remove the eyewash ball valve.
9. Install the new eyewash ball valve in reverse order of removal. Use pipe sealant. Pipe sealant is recommended for metal to metal thread (ball valve to pipe).
10. Test the valve operation by assuring the valve push plate is at 12 o'clock when the valve is off, and when the valve is completely open, the valve push plate is at 3 o’clock.
11. Test to ensure the valve opens and closes properly and does not leak before putting Therma-Flow® Plus into service.

To repair the eyewash ball valve.

1. Remove ball valve by completing step 1 to step 8 in the procedure “To Remove and Replace the Eyewash Ball Valve” on page 4-5.
2. Remove the retainer from the body by rotating it counterclockwise.
3. Push the ball out of the body with your finger (the valve must be in the closed position to remove the ball). Inspect the ball for excessive wear or damage. If the ball is scared, it is recommended that the whole valve be replaced. Clean and set aside a good ball for reuse.
4. Remove all seats and seals (to remove the stem packing, you may have to cut it with a knife).

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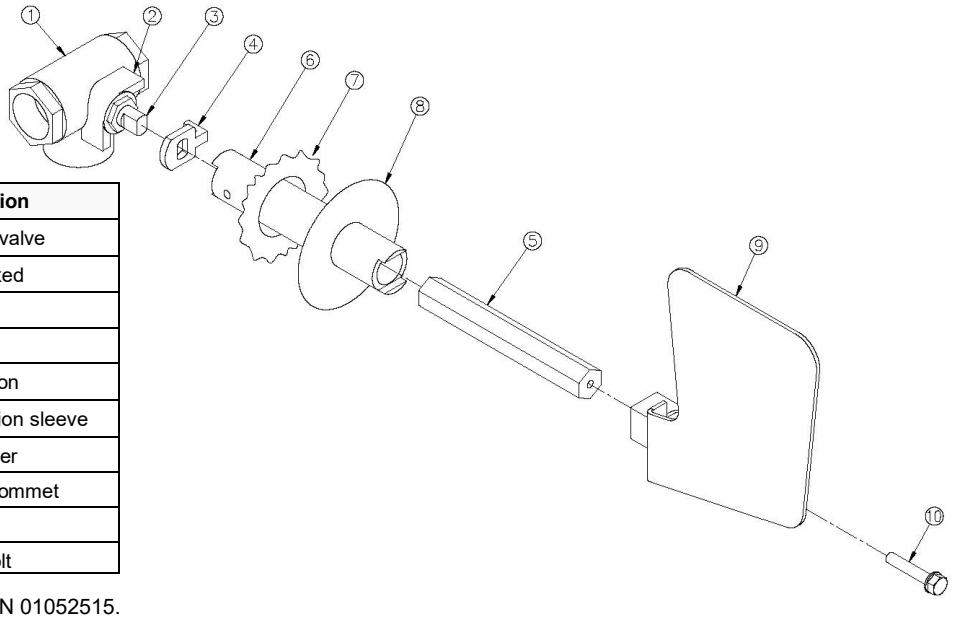
5. Replace all seats and seals as furnished in the Eyewash Ball Valve Repair Kit (see “6 Spare Parts” on page 6-1).
6. Do the reverse of the above procedure to reassemble the repaired valve. Use a suitable sealant on the retainer threads and pipe to valve connections.
7. As shown in Figure 4-4, locate (#4) valve stop on (#3) valve stem. Ensure the valve stop fits between the (#2) fixed stops of the valve at the 3 and 6 o'clock position.
8. Screw the (#5) valve extension on to the (#3) valve stem.
9. Slide the (#6) valve extension sleeve over the (#5) valve extension, locking the (#6) valve extension sleeve on to the (#4) valve stop.
10. Insert the (#8) valve extension grommet into cover.
11. Slip the (#7) eyewash cover over the (#6) valve extension sleeve.
12. Place the (#9) push plate over the (#5) valve extension and secure by attaching the (#10) bolt through the (#9) push plate, into the (#5) valve extension.
13. Replace the existing black seal strip to the covers.
14. Test the valve operation by assuring the valve push plate is at 12 o'clock when the valve is off, and when the valve is completely open, the valve push plate is at 3 o’clock. Ensure machined part of ball faces forward.
15. Test to ensure the repaired valve opens and closes properly and does not leak before putting Therma-Flow® Plus into service.



#	Part Number	Description
1.	Existing Ball Valve[1]	Self-draining valve
2.		Valve stop-fixed
3.		Valve stem
4.	01110142	Valve stop
5.		Valve extension
6.		Valve extension sleeve
7.	Existing Cover[1]	Eyewash cover
8.	00013664	Extension Grommet
9.	01052016	Push plate
10.	00012852	Hex Head Bolt

[1]Existing parts are not included in kit P/N 01052515.

Figure 4-4. Eyewash Ball Valve Extension Kit

4.5.2 Shower Ball Valve

To remove and replace the shower ball valve:

1. Relieve pressure and fluid from the system as described in “4.3 Relieving Fluid and Pressure from the System for Plumbing Repairs” on page 4-3.
2. Close the ball valve leading to the shower head.
3. Operate the valve fully open to fully closed to assure there are no trapped fluids or pressure in the body cavity.
4. Remove the actuator arm hex nut and remove the actuator arm
5. Remove the actuator hex nut and remove the actuator.
6. Remove the shower head pipe by doing the following:
   a. Use pipe wrench to hold the ball valve.
   b. Use another pipe wrench to unscrew and remove the shower head pipe.
7. Remove the shower ball valve by doing the following:
   a. Use a pipe wrench to hold the shower supply pipe.
   b. Use another pipe wrench to unscrew and remove the shower ball valve.
8. Install the new shower ball valve in reverse order of removal. Use pipe sealant. Pipe sealant is recommended for metal to metal thread (ball valve to pipe).
9. Test to ensure the valve opens and closes properly and does not leak before putting Therma-Flow® Plus into service.

To repair the shower ball valve.

1. Remove the ball valve by completing step 1 to step 7 in the procedure “To remove and replace the shower ball valve:” on page 4-8.
2. Remove the retainer from the body by rotating it counterclockwise.
3. Push the ball out of the body with your finger (the valve must be in the closed position to remove the ball). Inspect the ball for excessive wear or damage. If the ball is scared, it is recommended that the whole valve be replaced. Clean and set aside a good ball for reuse.
4. Remove the actuator handle nut by rotating it counterclockwise.
5. Remove all seats and seals (to remove the stem packing, you may have to cut it with a knife).
6. Replace all seats and seals as furnished in the Shower Ball Valve Repair Kit (see “6 Spare Parts” on page 6-1).

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7. Do the reverse of the above procedure to reassemble the repaired valve. Use a suitable sealant on the retainer threads and pipe to valve connections.
8. Test to ensure the repaired valve opens and closes properly and does not leak before putting Therma-Flow® Plus into service.

4.6 Freeze and Scald Protection Valves (Optional)

The freeze protection valve protects the shower and eyewash from freezing. The scald protection valve works to prevent water from getting to an over-heated temperature that may harm a potential user of the equipment. These valves should be inspected each year and cycled before hot or cold weather sets in.

CAUTION: The piping system should be well flushed and clear of any debris. Small foreign particles may obstruct and prevent closing of the valves.

These are key points about the freeze and scald protection valves:

- The freeze protection valve prevents rupture damage during freezing temperatures. It must be in a vertical position in order to drain the shower.
- The scald protection valve prevents the water from getting too hot. This valve will operate in any position.
- Discharge from the freeze protection valve and scald protection valve should be directed to waste without restrictions.
- The temperature control points for the freeze and scald protection valves are factory set and sealed (not adjustable). The element is activated by a temperature change of fluid inside the valve body.
  - — Freeze protection valves will begin to open at 40°F (4.4°C), and will be fully open at 35°F (1.7°C). The freeze protection valve is direct-acting and will close as the fluid warms up.
  - — Scald protection valves will begin to open at 95°F (35°C), and will be fully open at 100°F (37.8°C). The scald protection valve is reverse-acting and will close as the fluid cools down.

NOTE: Do not attempt to force valve open or clean with pointed object as scoring of valve seat and disk will create permanent leakage.

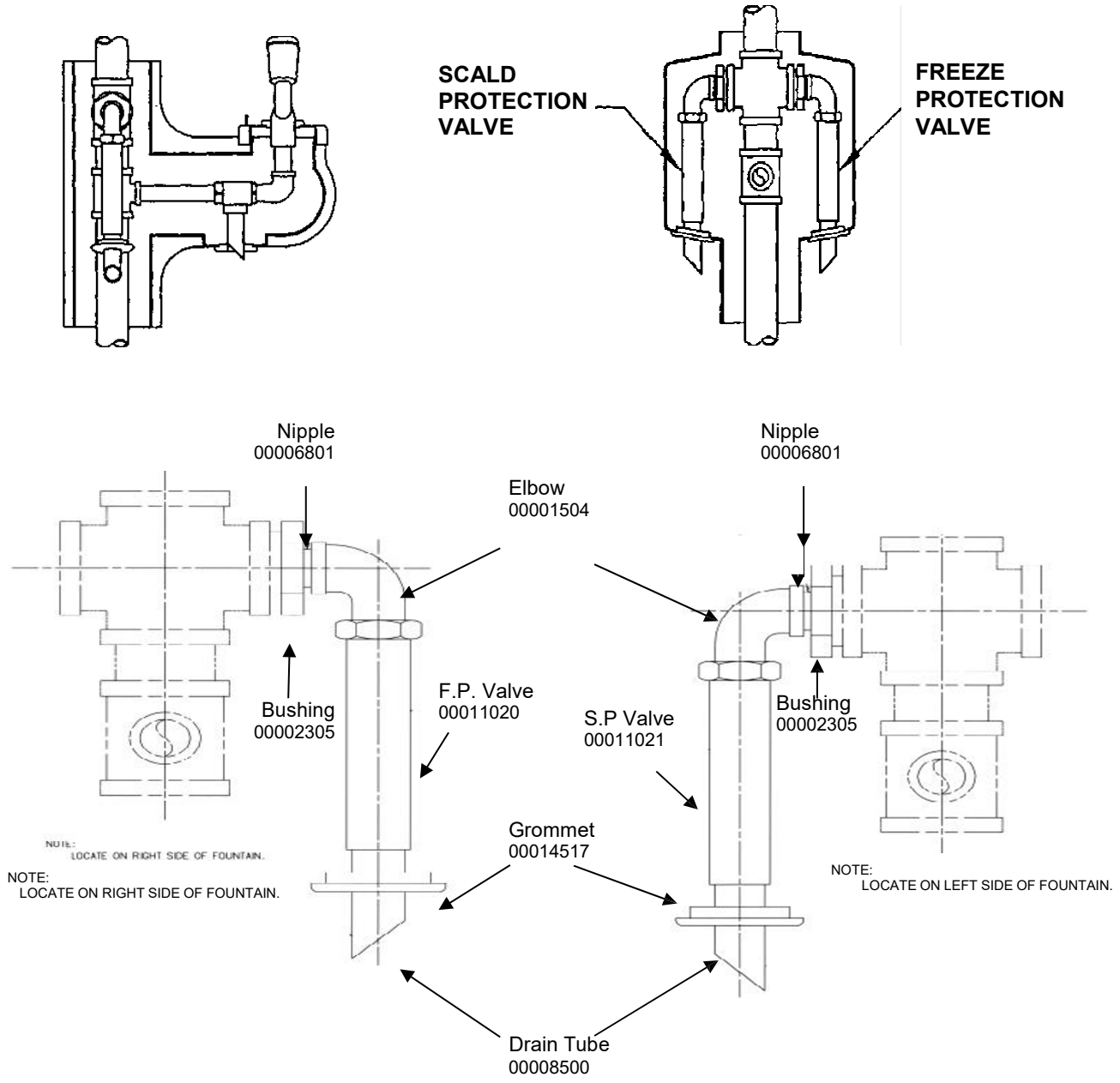

Figure 4-5. Freeze and Scald Protection Valves

4.6.1 Testing and Cleaning Freeze and Scald Protection Valves

It is recommended that at least once every year the freeze and scald protection valves are uninstalled, tested, and cleaned.

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Freeze Protection Valve

To test and clean the freeze protection valve:

1. Switch off the electrical power supply.
2. Close the water supply.
3. Relieve pressure and water from the system by opening the eyewash or shower.
4. Carefully remove the locking-ring that holds the freeze protection valve and remove the unit.
5. Place the valve in ice water. The ice water should be at a temperature below 35°F (1.7°C). Submerge the valve for 15 to 20 minutes. The freeze protection valve should be fully open at the end of this period. If it does not fully open, replace the defective valve.
6. If the valve opens, remove it from the ice water and clean it by forcing compressed air 40 PSI (278 kPa) - 50 PSI (345 kPa) through the inlet side of the valve for two (2) to three (3) minutes (see the nameplate for flow direction).
7. Place the freeze protection valve in warm water, 70°F (21.1°C) - 80°F (26.7°C), for 10 to 15 minutes.
8. Remove the valve from the warm water and attempt to force compressed air 60 PSI (414 kPa) through the inlet of the valve. No passage of air ensures the valve seat is closed and the valve is functioning properly.
9. With air connected to the valve, submerge the valve in a warm water bath to check for leakage. If bubbles appear repeat the cleaning process Steps 6 through 8 and retest the valve in the water bath.
10. If after two rounds of cleaning the valve continues to leak, replace with new valve (see “6. Spare Parts” on page 6-1). To replace, follow the reverse order of removal.
11. Open the water supply and ensure no leaking occurs.
12. Switch on the electrical power supply to the Therma-Flow® Plus.

Scald Protection Valve

WARNING: *Wear protective equipment during this hot water test. Contact with water as hot as 100°F (37.8°C) can scald human skin.*

To test and clean the scald protection valve:

1. Switch off the electrical power supply to the Therma-Flow® Plus.

2. Close the water supply.
3. Relieve pressure and water from the system by opening the eyewash or shower.
4. Carefully remove the locking-ring that holds the scald protection valve and remove the unit.
5. Place the valve in hot, 100°F (37.8°C), water for 15 to 20 minutes. The scald protection valve should be fully open at the end of this period. If it is not fully open, replace the defective valve.
6. If the valve opens, remove it from the hot water and clean it by forcing compressed air 40 PSI (278 kPa) - 50 PSI (345 kPa) through the inlet side of the valve for two (2) to three (3) minutes (see the nameplate for flow direction).
7. Place the scald protection valve in cold water 40°F (4.4°C) - 50°F (10°C) for 10 to 15 minutes.
8. Remove the valve from the cold water and force compressed air 100 PSI (689 kPa) through the inlet of the valve. No passage of air ensures the valve seat is closed and the valve is functioning properly.
9. With air connected to the valve, submerge the valve in a cold water bath to check for leakage. If bubbles appear repeat the cleaning process Steps 6 through 8 and retest the valve in the water bath.
10. If the valve leaks after being cleaned two (2) times, replace the valve in reverse order of removal.
11. Open the water supply.
12. Switch on the electrical power supply to Therma-Flow® Plus.

4.7 Heat Trace Cable (if applicable)

The heat trace cable keeps the pipes warm in the Therma-Flow® Plus system to prevent the water from freezing. The energized heat trace cable keeps the water temperature between 55°F (12.7°C) and 65°F (18.3°C). When the internal water temperature falls below 45°F (7.2°C), the thermostat closes the circuit to apply power to the heat trace cable. For more information, see “4.8 Heat Trace Cable Thermostat” on page 4-13.

The optional Heat Trace Indicator Bulb (amber light) on the junction box indicates power is being supplied to the heat trace cable.

When ‘trouble shooting’, to check the heat trace cable for operation, touch the heat trace cable to ensure it is emitting heat. Some covers and insulation may have to be removed for this effort. It should be warm when the controlling thermostat is below 45°F (7.2°C) and may stay on until 65°F (18.3°C) is achieved.

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4.8 Heat Trace Cable Thermostat (if applicable)

The thermostat (see Figure 4-6) opens or closes the circuit to energize or de-energize the optional heat trace cable. When the internal water temperature falls below 45°F (7.2°C), the thermostat closes the circuit to apply power to the heat trace cable.

If you find the water output is not between the 55°F (12.7°C) and 65°F (18.3°C) temperature range, the thermostat may need to be replaced. You need a continuity tester for the following procedure.

You need a continuity tester and a cold and hot water supply for the following quick test. If a warm or cold water supply is not available, remove and test the thermostat in the subsequent procedure.

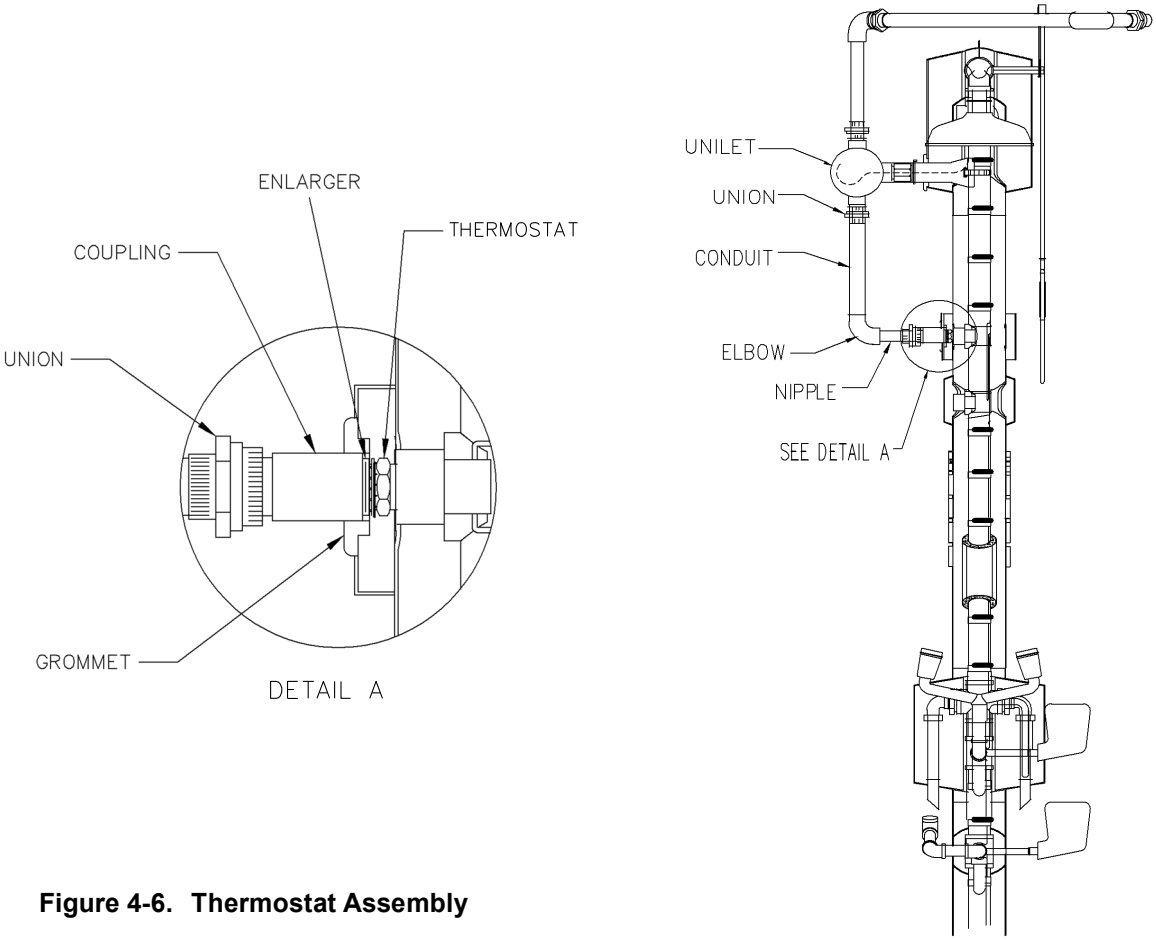

Figure 4-6. Thermostat Assembly

To perform a quick test on the thermostat:

1. Switch off the electrical power supply to the Therma-Flow® Plus.

2. Use a continuity tester at the thermostat connections in the junction box (see Figure 2-4 Electrical Schematic on page 2-7).

3. Do the following continuity tests:
   a. Using a cold water supply, the thermostat should close at 45°F (7.2°C) or below.
   b. Using a hot water supply, the thermostat should open at 55°F (12.7°C) or above.

To remove, test, and replace the thermostat:

1. Switch off the electrical power supply to the Therma-Flow® Plus.
2. Close the water supply.
3. Drain the shower by opening the eyewash valve and allow water to drain through the bottom drain port.
4. Disconnect the thermostat wires from terminal strip. Refer to Figure 2-4 Electrical Schematic on page 2-7).
5. Remove the conduit from the unilet by disconnecting union at unilet and disconnecting the union from the thermostat coupling.
6. Remove the upper vertical ABS cover (see Figures 4-1 and 4-5).
7. Use a 7/8” wrench to remove the thermostat
8. Test the thermostat by doing the following:
   a. Immerse the thermostat in a cold, below 45°F (7.2°C), water bath and test for continuity. The continuity tester should show the contacts as closed.
   b. Immerse the thermostat in hot, 65 to 70°F (18.3 - 21°C), water bath and test for continuity. The continuity tester should show the contacts as open.
9. Replace the thermostat if it fails either of the tests above. For the part number, see section “6 Spare Parts” on page 6-1.
10. Install the thermostat in reverse order of removal.

4.9 Alarms (optional)

Local and remote alarms (if applicable) operate when the eyewash or shower is actuated by a user. The alarms can be either or both of the following types:

- **Visual** with flashing lights
- **Audible** such as a horn, bell, or piezo annunciator

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These are the alarm components:

- Magnetic Activated Proximity (MAP®) Switch or
- Flow Switch
- Alarm Silence Button (comes with a piezo annunciator audible alarm)
- Alarm Flasher

To stop the alarms, you need to close the shower, eyewash and drench hose valves. However, units equipped with a piezo annunciator audible alarm has an alarm silence button to stop audible alarm (but not visual alarms).

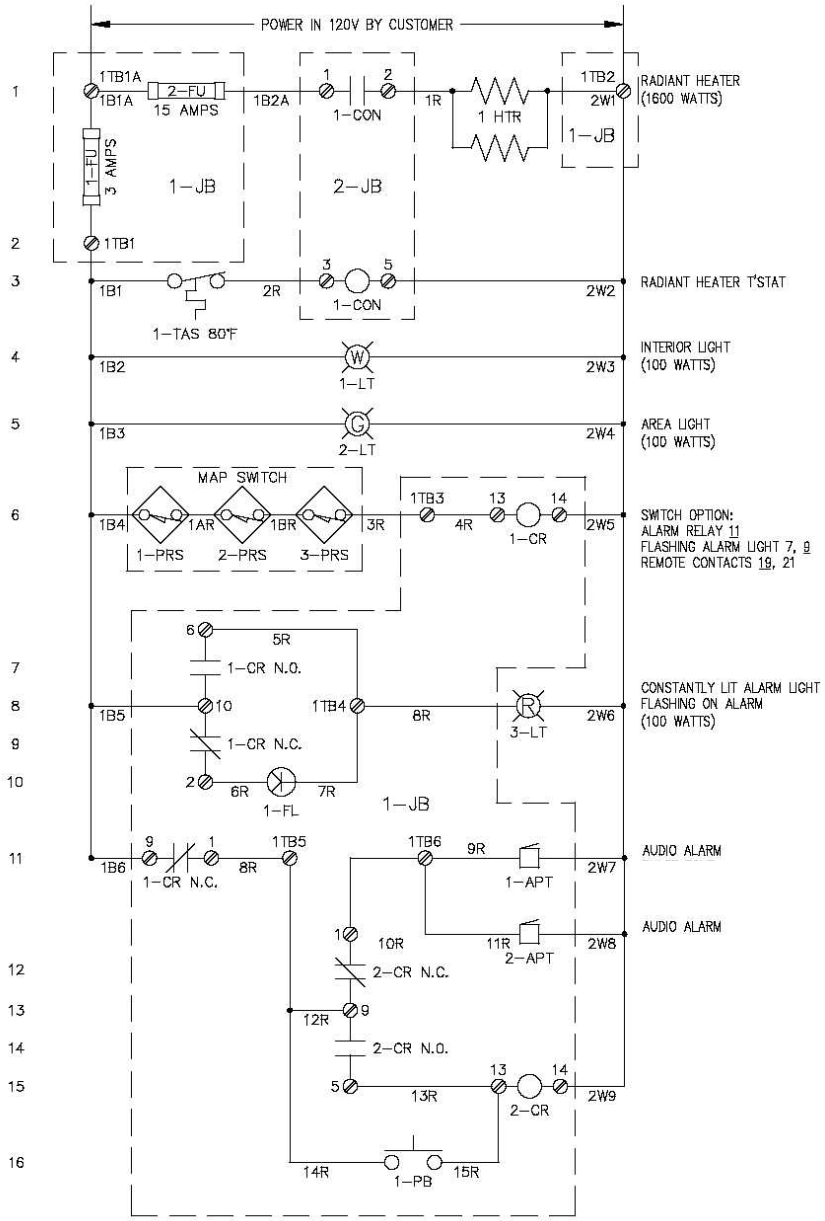
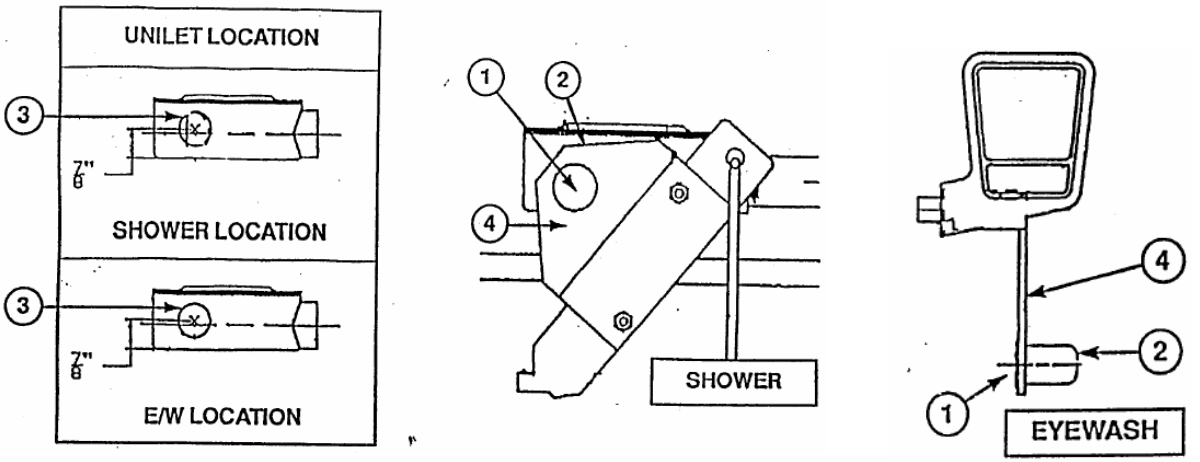


Figure 4-7. Wiring Diagram – Piezo Annunciator Audible Alarm with Reset Button

4.9.1 Magnetic Activated Proximity Switch (MAP® Switch) (optional)

The doors, shower and eyewash may include a magnetically activated proximity switch (MAP® switch) that operate local and/or remote alarms when the enclosure door is opened, or the eyewash/drench hose push plates or shower pull rod are actuated. When the magnetic field is broken, the switch closes or opens the circuit to operate the alarm.



SHOWER or DRENCH HOSE MAP® SWITCH REPAIR PARTS KIT
01052326

1) Magnet……...00013324
2) Magnet Cap…...00013007
3) Switch……..00013325
4) Bracket……...00014707

EYEWASH MAP® SWITCH REPAIR PARTS KIT
01052324

1) Magnet……...00013324
2) Magnet Cap…...00013007
3) Switch……..00013325
4) Bracket……...00014715

Figure 4-8. MAP® Switch Repair Parts Kit

If the MAP® switch does not operate the alarm or shut off the alarm when it is reset, do the following procedure.

To fix a MAP® switch:

1. Adjust the switch and magnet so that they are aligned properly and there is not more than one (1") inch (2.5 cm) gap between the magnet and switch.
2. Ensure the switch is clean and nothing is obstructing the contacts and magnetic field.

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3. Check the relay and other potential problems in the electrical circuit.
4. Replace the MAP® switch as described below if the above does not resolve the issue.

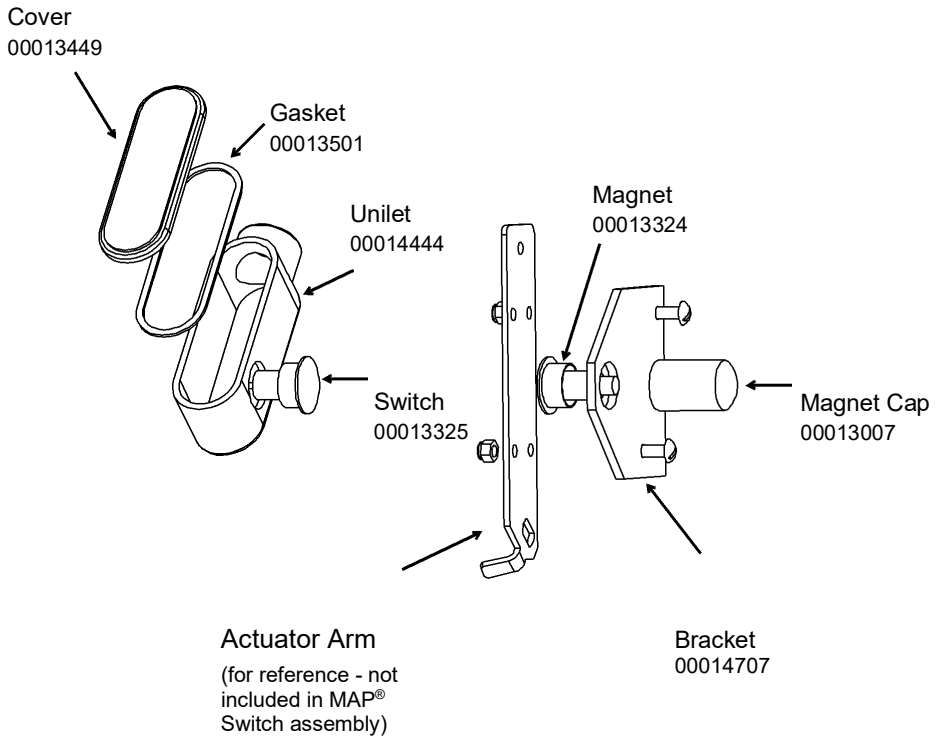

Figure 4-9. Shower MAP® Switch Assembly

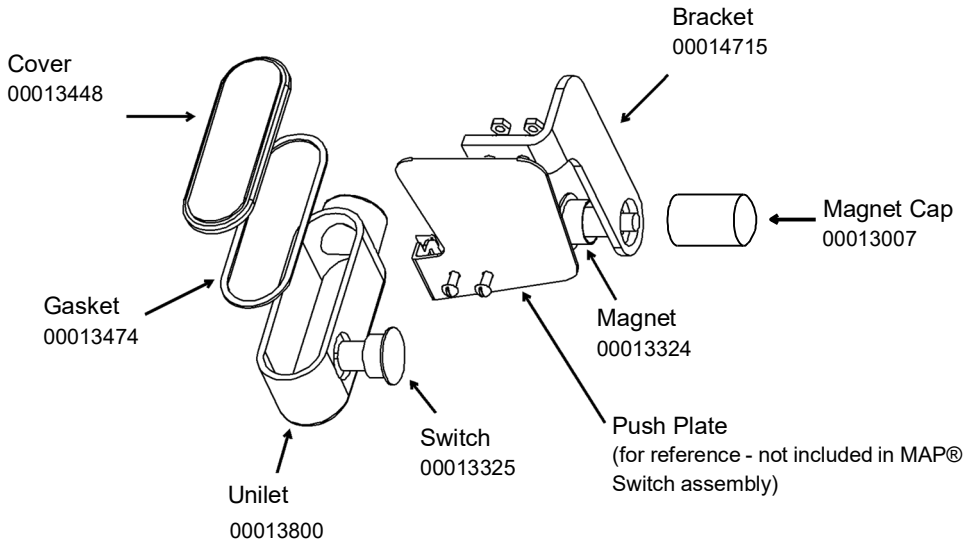

Figure 4-10. Eyewash MAP® Switch Assembly

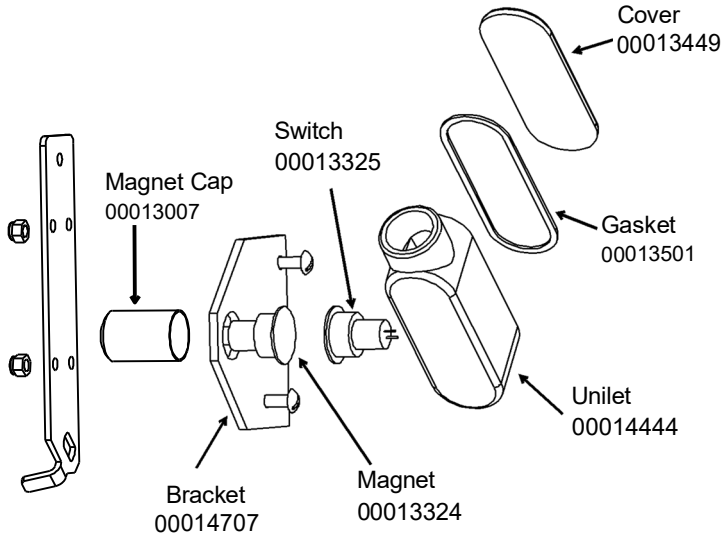

Figure 4-11. Drench Hose MAP® Switch Assembly

To replace the MAP® Switch:

1. Switch off the electrical power supply to Therma-Flow® Plus.
2. Remove the screws and switch box cover.
3. Make note of the wiring and disconnect the wires to the switch.
4. Remove the defective switch and install the new switch using silicone or acceptable caulking and in reverse order of removal.
5. Ensure the switch and the magnet on the actuator are aligned and there is no more than a one inch gap between the magnet and switch.
6. Test the MAP® switch by actuating the shower or eyewash to operate the alarms.

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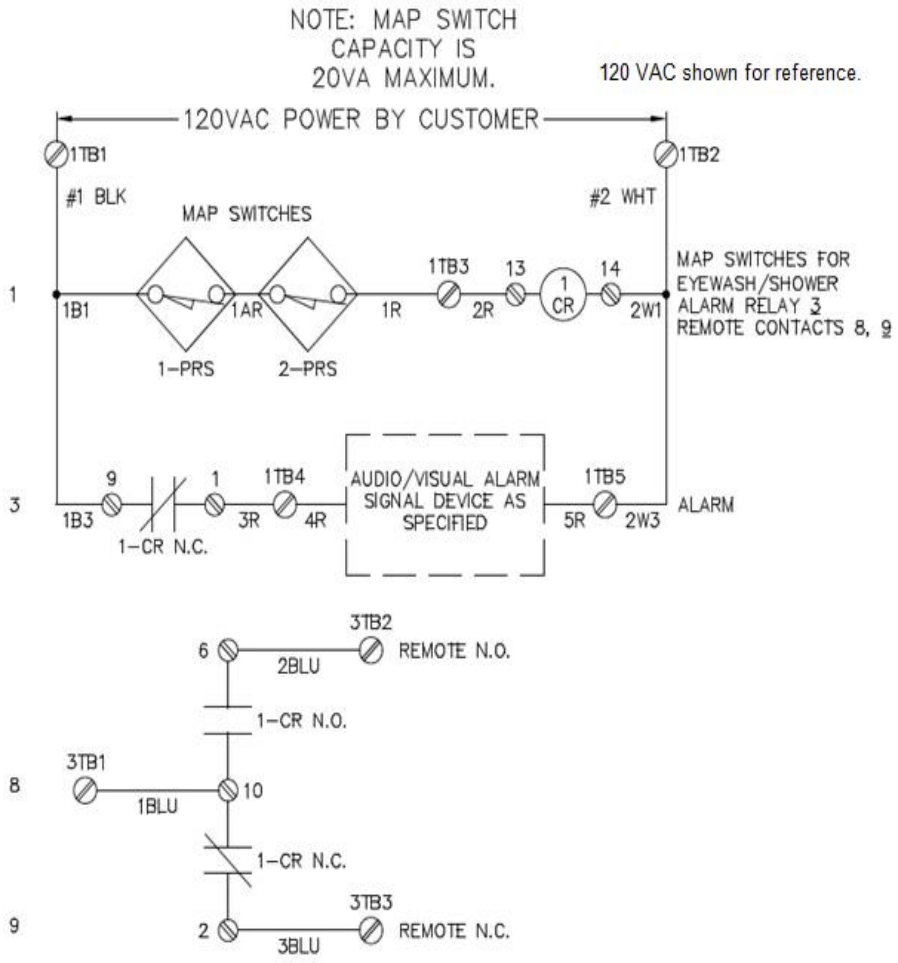

Figure 4-12. Map® Switch Schematic (120 Volts)

4.9.2 Flow Switch (optional)

The flow switch is an optional alarm actuating device. When flow is detected (2.0 gpm/7.6 lpm or more), the alarm circuit is closed or opened to operate a local and/or remote alarm (see Figure 4-12). The fluid flow pushes the magnet up to engage the switch. Replace the flow switch if it fails the test in the following procedure.

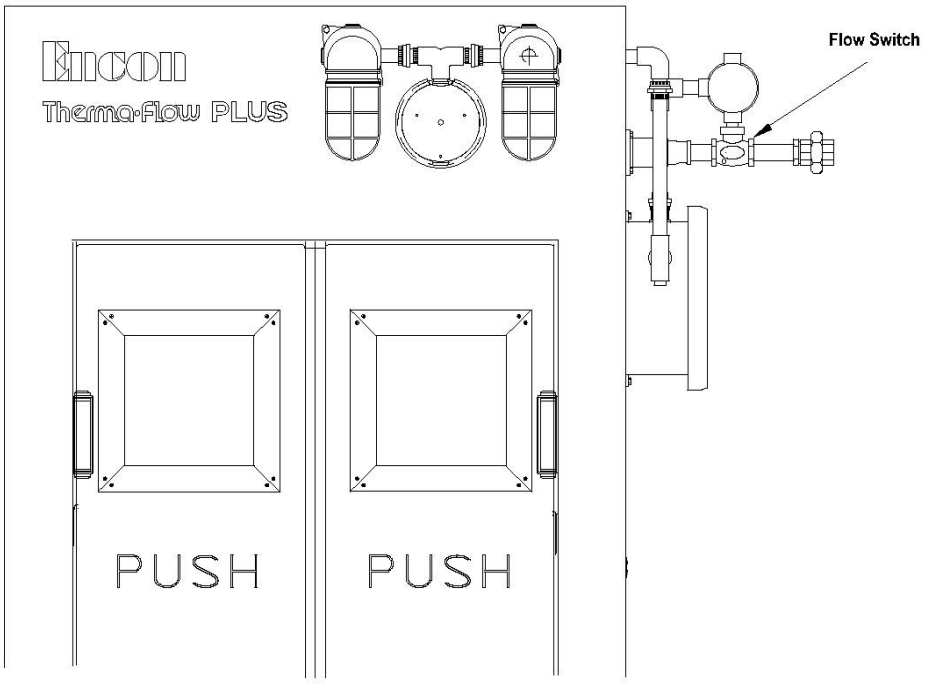

Figure 4-13. Upper Section with Alarms and Flow Switch

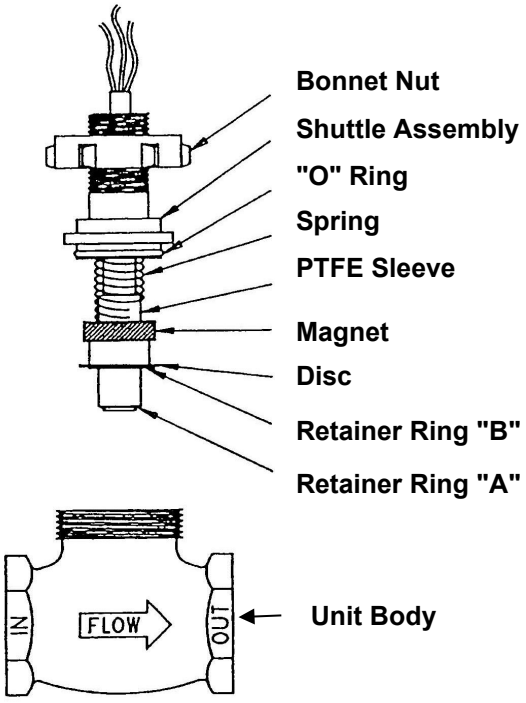

Figure 4-14. Flow Switch — Exploded View

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To test and replace the flow switch:

1. Switch off the main electrical power supply to Therma-Flow® Plus.
2. Relieve pressure and fluid from the system as described in “4.3 Relieving Fluid and Pressure from the System for Plumbing Repairs” on page 4-3.
3. If present, remove covers. See “4.2 Removing and Replacing ABS Covers to Access Components” on page 4-1.
4. Loosen the bonnet nut from the flow switch body at the conduit. Remove the bonnet ring. Rotate the switch bonnet counter-clockwise, clearing the conduit, and remove the flow switch assembly from the unit body. You do not have to remove the unit body from the system (see Figure. 4-13).
5. Ensure the shuttle assembly is clean and easily moves up and down the switch tube. If necessary, remove retainer ring "A" for complete shuttle disassembly and remove ring "B" to disassemble the disc only (see Figure. 4-13) to thoroughly clean the assembly.
6. Remove the unilet cover (where the flow switch wire connections are made) by turning the cover counter-clock wise to access the wire connections.
7. Make note of the wire connections and disconnect the flow switch wires (see Figure 2-4 Electrical Schematic on page 2-7). You may need to tie off the wires to re-pull them through the conduit for reinstallation.
8. Perform a continuity test using the black and red (normally closed) leads for the flow switch. The orange (normally open) lead is not used and is capped off with a wire nut.
9. The flow switch will show continuity or closed circuit under normal conditions. Should the test show otherwise, operate the switch through a cycle (lift and drop the shuttle and test for continuity readings).
10. If the circuit remains closed, clean all particulate from the shuttle and magnet and retest for continuity.

11. If the continuity cannot be broken, the switch contacts have failed and the flow switch must be replaced with the Flow Switch Bonnet Assembly (see “6 Spare Parts” on page 6-1).

12. Install the flow switch bonnet assembly in reverse order of removal.

    Note: When installing the flow switch, ensure the direction of the flow is correct by looking at the flow switch housing marked “IN” and “OUT (see Figure. 4-13). Do not let sealing compound get inside the flow switch.

13. Switch on electrical power and test to ensure the flow switch is working as designed.

4.10 Enclosure

The enclosure is constructed of Gelcote®, glass fiber, and urethane foam insulation that requires minimal maintenance.

WARNING: *Do not steam clean the enclosure as severe structural and cosmetic damage will occur.*

The enclosure surface can be cleaned using acetone, however, avoid contact with the graphics and the plexiglas windows. acetone will dissolve graphic decals and glaze plexiglas. Use soft soap and water to clean the graphics and windows.

When repairs to the enclosure are required, consult with a local glass fiber repair contractor. For Technical Information contact Encon Safety Products (see "Contact Information" on page iii).

Enclosure heater equipped units have a factory set non-adjustable thermostat. The heater automatically starts if the ambient temperature falls below 80°F (26.7°C). For information on how to replace the heater components, see “4.10.3 Enclosure Heater” on page 4-23.

4.10.1 Replacing the Enclosure Door Rubber Seals

The rubber door seals may deteriorate over time and need replacing. Rubber seals are located on the nose and between the hinges of the shower door.

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To replace the enclosure door rubber seals:

1. If you are replacing the rubber seal between the hinges, loosen the tension on the door hinges. For more information, see “2.8 Adjusting the Enclosure Doors” on page 2-9. You don’t need to remove the door if replacing the nose side seals.
2. Replace the seals by doing the following:
    a. For the hinge side, remove the old door seal including the remnants of glue and other material. Remove the self-adhesive protective backing and apply the new rubber seal to the door.
    b. For the nose side, remove the seal by removing the screws. Install the new nose seal using the same screws.

4.10.2 Windows

Windows are expected to last the life of the enclosure. However, if replacement is necessary, contact Encon Safety Products (see "Contact Information" on page iii) to order the part.

To replace a window:

1. Using a Phillips screw driver, remove the screws from the window frame.
2. Remove the window frame and the window.
3. Install the new window in reverse order of removal.

4.10.3 Enclosure Heater (optional)

Heater equipped units have a factory set non-adjustable thermostat built into the main junction box. The thermostat automatically starts the heater when the enclosure temperature falls below 80°F (26.7°C).

This section describes how to test and replace the following heating system components:

- Enclosure Heater
- Heater Thermostat
- Heater Contactor

WARNING: *Never operate the heater with the front panel off. Air flow across the heating elements requires the front panel in place. Injury from hot heating elements is possible with the front panel removed.*

WARNING: *Always disconnect the heater from the electrical power source before performing any service or maintenance.*

To replace the enclosure heater:

1. Switch off the main electrical power supply to Therma-Flow® Plus.
2. Remove the unilet cover adjacent to the heater by turning it counter- clockwise to access the wire connections.
3. Make note of the wire connections and disconnect the wires.
4. Remove the old heater and install the new heater in reverse order of removal.
5. Switch the electrical power on and ensure the heater starts when the temperature goes below the thermostat setting.

WARNING: *Always disconnect the heater from the electrical power source before performing any service or maintenance.*

To maintain the heater:

1. Keep the heater clean, especially the heating elements. Ensure the heater is off and cool to the touch, then remove dust, lint and accumulation of other material.
2. Never allow the heater to operate with restriction to the free circulation of air through it.
3. Check that the heater has not been damaged or deformed and that all conduit joints are secure.

Enclosure Heater Thermostat

The heater thermostat is located directly above the radiant heater (see Figure 4-15). When the thermostat reaches the set cold set point, the circuit to the con-tactor closes or opens to start or stop the heater. The thermostat is preset at 80°F (26.7°C).

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Figure 4-15. Enclosure Heater Thermostat

To test the enclosure heater thermostat:

1. Apply ice to the tip of the thermostat to simulate cold air temperature.
2. Determine if the heater starts. If the heater does not start, first check the circuitry, then replace the thermostat if necessary.

To replace the enclosure heater thermostat:

1. Switch off the main electrical power supply to Therma-Flow® Plus.
2. Open the thermostat unilet located above the enclosure heater.
3. Make note of the wire connections and disconnect the wires.
4. Remove the fitting that attaches the thermostat to the unilet.
5. Remove the thermostat and replace it with the new thermostat.
6. Wire the new thermostat in reverse order of removal.
7. Switch the electrical power on and test the thermostat by checking if the heater starts when the temperature goes below the thermostat setting.

Enclosure Heater Contactor

The heater contactor is in the junction box located inside the enclosure (see Figure 4-16). When the thermostat reaches the set cold set point, the contactor closes the circuit to start the heater. When the thermostat reaches the set hot point, the contactor opens the circuit to stop the heater. If the contactor does not close or open, the heater will not start or remains on indefinitely; if this hap-pens, the contactor may need to be replaced. Verify the heater thermostat is working properly before replacing the contactor.

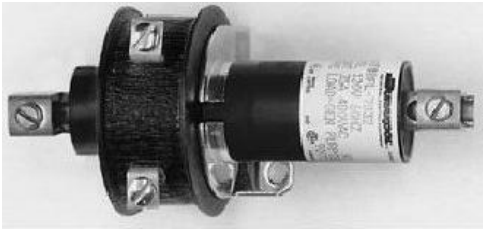

Figure 4-16. Enclosure Heater Contactor

To replace the enclosure heater contactor:

1. Switch off the main electrical power supply to Therma-Flow® Plus.
2. Open the junction box located inside the enclosure.
3. Make note of the wire connections and disconnect the wires.
4. Remove the defective contactor and install the new contactor in reverse order of removal.
5. Switch on the electrical power supply to Therma-Flow® Plus.
6. Test the contactor by checking if the heater starts and shuts off when the temperature goes below and above the thermostat setting 80°F (26.7°C). Apply ice to the thermostat to simulate cold air temperature (see Figure 4-15).

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5 TROUBLESHOOTING

5.1 High Water Temperature

Issue	Solution
Water too hot	High water temperature can generally be attributed to supply water temperature, radiant heat input from ambient conditions, or heat transfer from adjacent piping systems. Insulate or isolate as required. If radiant heat is a continual problem, a scald protection valve should be retrofitted to the shower for personnel protection reasons. Assure the thermostat is wired correctly (thermostat opens on rise in temperature and closes on fall).

5.2 Freezing

Component	Solution
Freeze Protection Valve	The freeze protection valve should be tightly closed at fluid temperatures of 40°F (4.4°C) and above. To test the freeze protection valve, see “4.6.1 Testing and Cleaning Freeze and Scald Protection Valves” on page 4-10.
Eyewash only freezing	Trapped water in the eyewash due to: • The 3-way self-draining valve is plugged and needs to be cleared. • The eyewash covers were replaced too quickly — not allowing water to drain back to atmosphere (wait 30 to 90 seconds to completely drain the eyewash). • Interrupted power supply— check continuous power supply to the unit and the thermostat. Shower maximum amperage load is shown on the Encon® equipment label located on the junction box.
Shower Head only freezing	Slight freezing of water droplets is to be expected in extremely cold environments. This condition does not affect the operation of the shower, as ice crystals will be removed upon shower activation.

Component	Solution
Complete Unit Freezing	If the entire unit is freezing it is typically a result of the following: • Electrical power failure — do the following: 1. Switch off electrical power to the system before testing. 2. Check power supply for proper voltage and circuit breaker for proper sizing. Shower maximum amperage load is shown on the Encon® equipment label located on the junction box. 3. With continuity tester, check to see that bus wires are intact and nothing is grounded out between the metal sheath and bus wires. • If applicable, ensure the radiant heater thermostat and contactor are operating. See “4.10 Enclosure” on page 4-22. Applicable on units with Therma-Flow® shower station: • Ensure the heat trace cable is operating. See “4.7 Heat Trace Cable” on page 4-12. • The thermostat is incorrectly wired or thermostat failure. See “4.8 Thermostat” on page 4-13. • If fluid is evident on the insulation. Fix the leak.

5.3 Electrical

Component	Solution
Circuit breaker (supplied by others) tripping	• Check the ground fault interrupter and reset it if necessary. • Circuit breaker trip is typically a result of a ground fault or short circuit. With power disconnected, perform continuity testing (power to ground). Areas of potential failure include: — Junction box connections. — Cable termination seal. — Splice where heat shrink insulators are located. • Circuit breaker trip can also be attributed to overloading circuit breakers, i.e., too many devices powered from a single power feed. Each shower will draw a maximum of 4 amps at cold start up. Cold start up conditions cause a higher current draw (in-rush current) than normal. Heat trace cable circuit breakers must be sized with in- rush current as criteria.

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5.4 Alarms

Activation of alarms is by flow switch or MAP® switch.

Issue	Solution
Alarm will not shut-off	• The flow switch may be stuck open (energized) by metal shavings or pipe scale. Disconnect the power, remove bonnet, and clean the shuttle (see “4.9.2 Flow Switch (optional)” on page 4-19). • The MAP® switches may require repositioning after a period of time due to usage. Readjust them as required. See “4.9.1 Magnetic Activated Proximity Switch (MAP® Switch)” on page 4-16.
Alarm light does not operate	Check bulb in alarm light. If the light bulb is good, check continuity of the alarm circuit according to the wiring diagram (refer to Figure 2-4 on page 2-7.
Audible Alarm does not operate	Check for debris in MAP® switch or flow switch (see first item above). Shavings, rocks, and objects can prevent switches form closing, the alarm will not energize. If energized (alarm) local and remote will be constant.
Remote Alarm does not operate	Check the relay located in junction box for proper wiring. The relay is rated at 5 amps or 3 amps for 120 or 240 volt systems.

6 SPARE PARTS

6.1 Shower Parts

NOMENCLATURE	PART NO.
BALL VALVE, 1¼" (SHOWER)	00011022
BALL VALVE EXTENSION (SHOWER)	01110147
BALL VALVE EXTENSION KIT (SHOWER) (INCLUDES GROMMET, EXTENSION, SCREW, ACTUATOR ARM W/ WELD BLOCK)	01052532
BALL VALVE EXTENSION KIT SST (SHOWER)	01052545
BALL VALVE REPAIR KIT, 1¼" (SHOWER) (INCLUDES O-RINGS AND BALL VALVE SEATS)	00011053
ACTUATOR ARM WITH WELD BLOCK	01110152
NUT FOR SHOWER ACTUATOR ARM	00011201
PULL ROD ASSEMBLY (SHOWER) (INCLUDES PULL ROD AND ACTUATOR ARM)	35052460M
PULL ROD WITH DECAL & FASTENER	01052003
SHOWER HEAD, 20 GPM (75.7 LPM) (REGULATOR INCLUDED)	01054005
SHOWER HEAD, 30 GPM (113.5 LPM) (REGULATOR INCLUDED)	01054003
BALL VALVE, ½" SELF-DRAINING (EYEWASH)	00011059
BALL VALVE, ½” SELF-DRAINING (DRENCH HOSE)	00011037
BALL VALVE EXTENSION FOR ½” BALL VALVE (EYEWASH OR DRENCH HOSE) (INCLUDES EXTENSION, SLEEVE & STOP)	01110142

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NOMENCLATURE	PART NO.
BALL VALVE EXTENSION KIT (EYEWASH OR DRENCH HOSE) (INCLUDES GROMMET, EXTENSION, SCREW, PUSH PLATE)	01052515
BALL VALVE EXTENSION KIT SST (EYEWASH OR DRENCH HOSE) (INCLUDES GROMMET, SST EXTENSION, SCREW, PUSH PLATE)	01052544
BALL VALVE REPAIR KIT, ½" (EYEWASH OR DRENCH HOSE) (INCLUDES O-RINGS AND BALL VALVE SEATS)	00011052
CAP COVER	01110500
EYEWASH YOKE WITH POP-OFF COVERS	01052123
NUT FOR EYEWASH BALL VALVE EXTENSION	00011206
PUSH PLATE SST WITH WELD BLOCK	01052016
DRENCH HOSE ASSEMBLY	01090020
DRAIN TUBE (EYEWASH OR DRENCH HOSE)	00008500
NIP PLASTIC ½" x 2½" (EYEWASH OR DRENCH HOSE)	00008504
SCREW, SELF-LOCKING FOR PUSH PLATE	00012852

6.2 Alarm Parts

NOMENCLATURE	PART NO.
ALARM BELL 120 VOLT	00013389
ALARM BELL 240 VOLT	00013387
ALARM BOX (BELL)	00013388
ALARM FLASHER 120 VOLT	00013575
ALARM FLASHER 240 VOLT	00013662
ALARM HORN 120 VOLT	00014460
ALARM HORN 240 VOLT	00014462
FLOW SWITCH BONNET, 1"	00014683
FLOW SWITCH	00014685
GROMMET (FLOW SWITCH BONNET)	00014536
GROMMET (FLOW SWITCH INLET)	00014555
MAGNET CAP FOR MAP® SWITCH	00013007
MAGNET ONLY FOR MAP® SWITCH	00013324
MAGNET & SWITCH FOR MAP® SWITCH	00013319
SWITCH ONLY FOR MAP® SWITCH	00013325
TILT BRACKET (SHOWER MAP® SWITCH)	00014707

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NOMENCLATURE	PART NO.
TILT BRACKET (EYEWASH OR DRENCH HOSE MAP® SWITCH)	00014715
MAP® SWITCH REPAIR KIT SHOWER (INCLUDES SWITCH, CAP, MAGNET, & TILT BRACKET)	01052326
MAP® SWITCH REPAIR KIT EYEWASH & DRENCH HOSE (INCLUDES SWITCH, CAP, MAGNET, & TILT BRACKET)	01052324
O-RING FOR FLOW SWITCH BONNET	00014677
PIEZO ANNUNCIATOR AUDIO 120 VOLT (2 EACH)	00014482
PIEZO ANNUNCIATOR AUDIO 240 VOLT (2 EACH)	00014486
RELAY SOCKET FOR FLOW SWITCH OR MAP® SWITCH 120/240 VOLTS	00014638
RELAY FOR ALARM 120 VOLT, 5 AMP	00013393
RELAY FOR ALARM 240 VOLT, 3 AMP	00013252
RELAY (USED FOR EXTRA HEAT TRACE CABLE) 120 VOLT, 10 AMP	00014620
RELAY (USED FOR EXTRA HEAT TRACE CABLE) 240 VOLT, 10 AMP	00014703
RESET BUTTON (FOR PIEZO ANNUNCIATOR) 120/240 VOLT	00014628

6.3 Cover Assemblies

NOMENCLATURE	PART NO.
YELLOW	
24" (609.6 mm) OVERHEAD LEFT SIDE	01110652
24" (609.6 mm) OVERHEAD RIGHT SIDE	01110650
EYEWASH LEFT SIDE (SCALD VALVE SIDE) (TOP CENTER OUTLET)	01110677
EYEWASH RIGHT SIDE (FREEZE VALVE SIDE) (TOP CENTER OUTLET)	01110680
LOWER VERTICAL LEFT SIDE	01110527
LOWER VERTICAL RIGHT SIDE	01110528
UPPER VERTICAL LEFT SIDE (THERMOSTAT)	01110659
UPPER VERTICAL RIGHT SIDE	01110658

6.4 Accessory Parts

NOMENCLATURE	PART NO.
BALL VALVE, 3-WAY 1¼" (UNDERGROUND EXTENSION SHUTOFF)	00011097
BULB 120 VOLT (HEAT TRACE INDICATOR)	00014538
BULB 240 VOLT (HEAT TRACE INDICATOR)	00013543
BULB, BASE SOCKET	00014500
LENS, AMBER (HEAT TRACE INDICATOR)	00014532

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NOMENCLATURE	PART NO.
THERMOSTAT (HEAT TRACE CABLE)	00014641
THERMOSTAT (RADIANT HEATER)	00013600
FREEZE PROTECTION VALVE	00011020
SCALD PROTECTION VALVE	00011021
DECAL – THERMA-FLOW® LOGO (OVERHEAD COVERS)	01112823
DRAIN TUBE (FREEZE / SCALD PROTECTION VALVES)	00008500
GLOBE, BLUE (AREA LIGHT)	00013582
GLOBE, CLEAR (AREA LIGHT/INTERIOR LIGHT)	00013460
GLOBE, GREEN (AREA LIGHT)	00013571
GLOBE, RED (ALARM LIGHT)	00014606
LIGHT GUARD	00013612
GROMMET COVER (SHOWER HEAD)	00014554
GROMMET 1¼" I.D. FOR BALL VALVE EXTENSION (SHOWER)	00013644
GROMMET FOR DRAIN TUBE (EYEWASH OR DRENCH HOSE)	00013676
GROMMET (EYEWASH YOKE-TOP CENTER OUTLET LOCATION)	00013676
GROMMET FOR BALL VALVE EXTENSION (EYEWASH OR DRENCH HOSE)	00013676
GROMMET (DRENCH HOSE)	00013676
GROMMET (FLOOR FLANGE AND WATER INLET)	00014555

NOMENCLATURE	PART NO.
GROMMET (FREEZE / SCALD PROTECTION VALVES)	00014517
GROMMET (HEAT TRACE CABLE UNILET)	00013644
GROMMET (THERMOSTAT)	00014519
GROMMET SOLID (WATER INLET)	00014525
INSULATION, 2" (50.8 mm) IPS x ½" (12.7 mm) THK #620 ARMAFLEX	00013545
INSULATION, 1⅜" (34.93 mm) ID x ¾" (19.05 mm) THK	00014504
INSULATION, 1½" (38.1 mm) IPS x ½" (12.7 mm) THK	01360177
FOAM TAPE	00013727

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PROPOSITION 65

WARNING: This product can expose you to BPA, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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QUALITY SYSTEM CERTIFICATION
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