



# Temperature Control for Safety Showers



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## The Application

Emergency safety showers and eyewash stations are a necessity in any facility where chemical spills are a potential threat. To ensure that these emergency fixtures are able to meet OSHA requirements of 80°F (26.7°C) tepid water at all times, ThermOmegaTech® provides several solutions: Therm-O-Mix® Station, Therm-O-Mix® Station/Water-Water Mix, ESS Hot Water Heater, freeze protection valves, and scald protection valves.

## Therm-O-Mix® Station

The **Therm-O-Mix® Station** provides an instant and reliable source of tepid water for a safety shower and eyewash station system using a facility's existing steam and water supplies.

### How It Works

1. When an emergency shower or eyewash station is activated, the pressure drop opens the steam control valve.
2. The steam heats the cold water via a thermal heat exchanger.
3. The now hot water travels through an initial tempering valve that adds cold water and reduces the water temperature to about 100°F (37.8°C).
4. The water goes through a second mixing valve that adds more cold water and lowers the temperature to 80°F (26.7°C).
5. The now tepid water is delivered through the emergency fixtures.

### Advantages

- Self-operating controllers - requires no electric
- Uses existing plant steam and water supply
- Maintains constant 80°F (26.7°C) output regardless of inlet water temperature (between 40°F & 80°F (4.4°C & 26.7°C))
- Self-purging - no need for an elaborate drainage system
- Fail safe valves to prevent accidental scalding
- Easy to retrofit on existing shower or combination shower/eyewash stations

### Features

- Plant steam and water never mix
- Standard pressure unit available for 45-60 PSIG steam pressure & low pressure unit available for 15-30 PSIG steam pressure
- Durable enclosure can be readily removed for service
- Conforms to OSHA and ANSI recommendations
- ASSE 1071 compliant mixing valve
- Can be used in explosion proof environments



## Therm-O-Mix® Station/WWM

In facilities where steam is not readily available, the Therm-O-Mix® Station/Water-Water Mix (WWM) provides an instantaneous and reliable source of tepid water for safety showers and eyewash stations by utilizing a facility's existing hot and cold water supply.

### Advantages

- Self-operating controllers - requires no power
- Utilizes existing hot and cold water supply
- Easy to retrofit on existing shower or combination shower/ eyewash stations
- Offered in 70°F (21°C), 75°F (24°C), 80°F (27°C), or 85°F (30°C) output temperature models
- Optional durable, all weather version in high visibility LDPE enclosure available

### Features

- Conforms to OSHA and ANSI recommendations
- Compact, lightweight (under 15 lbs/6 kg) design easily supported by piping connections
- Provides tepid water from 3 GPM to 25 GPM with water inlet pressure of at least 40 PSIG



## Emergency Safety Shower Hot Water Heater (ESS)

The ESS is a water heater packaged system designed to meet the requirements of ANSI Z358.1-2009 for tepid water delivery to an emergency drench system. The water heater is packaged with the Therm-O-Mix® Station/WWM, a mixing valve specifically designed, tested and proven for use in emergency safety shower/face/eyewash applications.

### Advantages

- Should the facility lose electricity after the unit has already heated the water in its tank, it will continue to supply tepid water
- Fail safe design prohibits delivery of overheated water to prevent scalding
- Reduces the risk of Legionella because water is stored at an elevated temperature

### Features

- Factory packaged with Therm-O-Mix® Station/WWM, all electrical controls, & dial gauges to ensure reliable operation
- Heavy Duty Construction with Hydrastone cement lining provides tank longevity
- Maintains outlet water temperature of 85°F regardless of inlet pressure or temperature
- Conforms to OSHA and ANSI recommendations





## Freeze Protection

Exposed water lines on safety shower and eyewash stations are often left unprotected from freezing conditions until they are imminent, or in many cases only when it's too late and freeze damage has already occurred.

Relying on manually opening valves for freeze protection allows for human error or plugging of partially cracked valves; the self-actuating HAT/FP valve eliminates these risks. The HAT/FP thermostatic freeze protection valves can be installed to monitor either the ambient temperature or actual water temperature and then respond by bleeding off the cold water and allowing warmer water to backfill to prevent the pipes from freezing.

### Advantages

- Protects equipment from freeze damage
- Self-operating - no outside power source required
- Discharges the minimum amount of water required
- Fast response
- Primary protection or fail safe backup



## Scald Protection

Overheating of pipes caused by solar radiation or steam/electric tracing can result in extremely high temperatures at the point of use if the excessively hot water is not eliminated; the HAT/SP valve resolves this dangerous situation.

Installed at the highest point on the system to monitor either the ambient temperature or actual water temperature, the HAT/SP will bleed off the excessively hot water and allow cooler water to backfill to prevent an individual from being scalded when they activate the safety shower or eyewash unit.

### Advantages

- Protects safety showers from over-temperature conditions, keeping personnel safe
- Self-operating - no outside power source required
- Discharges the minimum amount of water required to keep water temperature within safe limits
- Fast response

