



# Flo-Rite-Temp Drench / Safety Shower System

The problem which faces many companies today is how to safely warm water to be used effectively in a drench/safety shower or eye wash application.

Storage tank units can run out of warm water causing people to go into possible shock due to cold water exposure or to end the shower before proper flushing has taken place. Also, because the water in the tank is only heated to a temperature range of 65 to 95°F, there is the potential risk of legionella bacteria forming inside of the tank. Lastly, tank systems are feedback systems which when thermostatic elements fail due to constant on/off control, can cause severe overheating of the water, leading to personal injury.

The solution is to use the Armstrong Flo-Rite-Temp tankless instantaneous feedforward water heater in series with a self-contained three way tempering valve set at your required temperature.

## How the system works

The system, when piped as shown in the drawing, will provide a safe, continuous and dependable source of accurately controlled warm water.

Incoming cold water is heated between 120 to 130°F by the Flo-Rite-Temp. (The unit is set to provide a constant supply of hot water at an adjusted set point within this temperature range, usually the lowest set point of 120°F is used). At the same time that cold water is supplying the heater it is also supplying one of the three ports on the tempering valve (Port C). The outlet hot water of the Flo-Rite-Temp flows into a second port on the tempering valve (Port B). The third port is piped to the drench shower head (Port A).

The tempering valve properly proportions the hot and cold incoming water to obtain a preset delivery temperature to the drench shower head. Demand induced changes are sensed and automatically compensated for by the tempering valve so that shower output temperature remains constant. A recirculation system may also be incorporated in this system and is especially recommended in applications where shower lines are exposed to the cold air or shower heads are a distance from the heater (see option 2).

The Feedforward control of the Flo-Rite-Temp eliminates the danger of thermostatic element failure and overheating typical in all feedback controlled water heaters. All water is heated instantaneously **on the spot**, there is no storage of heated water or shower time limits.

**Option 1:** Temperature relief due to the potential accumulation of ambient heat picked up from the piping.

**Option 2:** Water recirculation when heater is servicing a long run to the shower head, more than one shower head, or piping is exposed to cold ambient temperatures.

