

## How it works: Closed Loop Schematic

A closed loop system design is common in northern climates, where freezing weather more frequently occurs. An FDA- approved heat exchange solution circulates through the collector, and a heat exchanger transfers the heat from the solution to the tank water. Generally, if the heat exchanger is installed in the storage tank, it should be in the lower half of the tank.

In the system shown here, a heat transfer solution is pumped through a closed loop which includes the collector, connecting piping, pump, an expansion tank and a heat exchanger. Heat is harvested in the collector and transferred to the potable water through the heat exchanger in the lower half of the storage tank. An alternative of this design is to wrap the heat exchanger around the tank, which keeps it from contact with potable water.

The brain of the system is a differential controller. In conjunction with collector and tank temperature sensors, the controller determines when the pump should be activated to direct the heat transfer fluid through the collector.

We recommend using a food grade glycol solution which is a mixture of distilled water and antifreeze. This type of fluid freezes only at extremely low temperatures so the system is protected from damage caused by severe cold.

