

# TEMPERATURE CONTROL RECIRCULATOR

## MODEL 9489HC

The Model 9489HC Temperature Control Recirculator is a single, compact, mobile unit, containing a pump, heater, chiller, and solution reservoir. It will accurately control the temperature of an external process bath of liquid  $\pm 1^{\circ}\text{C}$  by circulating a water/glycol solution through the reservoir, which contains a refrigeration coil, heater, and dual thermocouples, and through exchange tubing in the external bath. The distance between the standard unit and the process bath should be no more than 50 feet, and well insulated tubing must be utilized.

The Recirculator temperature is controlled by a P.I.D. (Proportional, Integral, Derivative) Loop temperature controller. This temperature controller is also capable of being remotely set and monitored by a PLC or host computer. Actual temperature indication is displayed on the temperature controller. The temperature controller enables heat or cooling based on the setpoint and the actual current recirculating liquid temperature. Once the temperature is set, the controller turns the heater on and off to maintain the process temperature setting. The chiller runs constantly, and the heater will overcome the effect of the chiller to heat the solution. When the heater is off, the chiller will rapidly reduce the temperature of the solution in the Reservoir. The temperature range of this chiller is from  $15^{\circ}\text{C}$  to  $45^{\circ}\text{C}$ ., with a heater capacity of 1500 watts, and a cooling capacity of 6200 BTU at  $15^{\circ}\text{C}$ .

With the Recirculator turned on, the water/glycol solution is circulated through the exchange coils in the process bath via a PP/TFE air-operated



diaphragm pump. If the level of the Recirculator's solution tank falls below a safe level, the pump, heater, and cooling compressor is turned off and an alarm indicator light is lit. The Recirculator is monitored for low level, low flow, and over temperature.

The Recirculator connects to a process bench via valve lock quick disconnects with polyethylene supply and return tubing, 220 volt AC electrical service and a 9 pin (AMP circular) connector for remote control and monitoring.

The Model 9489HC Temperature Control Recirculator is designed and constructed to meet all applicable major U.S. electrical and mechanical codes.

*NOTE: Optional communications available: RS232/RS485/DeviceNet*

*Optional Model 9682C is available as a chiller only (no heating function)*

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