WHAT IS CLAIMED IS:

1. A heat transfer system, comprising:

a heat exchanger that defines a first fluid path and a second fluid path;

a first variable control pump for providing variable flow of a first circulation medium through the first fluid path of the heat exchanger;

a variable flow controlling mechanical device for providing variable flow of a second circulation medium through the second fluid path of the heat exchanger;

sensors for detecting variables, the sensors comprising first at least one sensor for sensing at least one variable indicative of the first circulation medium and second at least one sensor for sensing at least one variable indicative of the second circulation medium; and

at least one controller configured to control the first variable control pump in a first type of flow control mode, and switch control of the first variable control pump to a second type of flow control mode that is different than the first type of control mode.

2. The heat transfer system as claimed in claim 1, wherein the first type of flow control mode or the second type of flow control mode uses a feed forward control loop based on the detected variables of the first circulation medium or the second fluid circulation medium.

3. The heat transfer system as claimed in claim 1, wherein the first type of flow control mode or the second type of flow control mode uses a feed forward control loop based on the detected variables of the first circulation medium and the second fluid circulation medium.

4. The heat transfer system as claimed in claim 1, wherein the controller is configured to automatically perform the switch based on the variables detected from the sensors.