

Specification for Heat Transfer Products, Inc. Vision 2 System

Vision 2 Multiple Temperature Control Guide Specifications

Vision 2 Multi-Temperature Submix Zone System:

Control system shall be manufactured by Heat Transfer Products, Inc. as a complete package, encased in a stainless steel cabinet with removable cover that seamlessly integrates the operation of one (1) single boiler so as to automatically achieve up to 4 different sub-mixed zone temperatures with the following attributes, while automatically managing the boiler's modulating burner BTU input:

- a. The control shall have the capacity to integrate with a Vision 3 control to manage a minimum of 2 to a maximum of 8 boilers in such a way so as to manage the capacity of the cascade as one big boiler.
- b. The control shall have the capacity to connect up to 8 Vision 2 panels together so as to manage up to 32 different submix zone temperatures within one system.
- c. The control shall have the capacity to allow user programming of individual outdoor reset parameters for each sub-mix temperature zone while using only one outdoor sensor (standard equipment).
- d. The control shall automatically manage energizing of the field supplied circulating pump and factory supplied three-way PWM modulating motorized water mixing valve in each of the submix zones based on the sub mix zone supply water set point and the determined actual load on the basis of a room thermostat (by others), outdoor sensor (HTP supplied), or 0-10 volt signal (by others) to a sub mix zone.
- e. The control shall allow the user to program different supply water temperature set points for each sub mix zone based on user set point requirements for each sub mix zone.
- f. The control shall have the capacity to manage the boiler BTU input to achieve a boiler supply water temperature equal to the set point of the highest sub mix zone supply water temperature calling for heat at any time as measured by a sub mix zone sensor in each sub mix zone. Likewise, for any lower temperature set point sub mix zones that are simultaneously operating, the control shall have the capacity to automatically mix the boiler supply water and sub mix zone return water, within each zone to deliver the correct water temperature required for each zone as measured by the sub mix zone sensor in that sub mix zone.
- g. The control shall have the capacity to operate all 8 sub-mix zones simultaneously to supply water temperatures equal to the sub mix zone set point required in each sub mix zone.
- h. The control shall have the capacity to manage the boiler BTU input, and set point so that the boiler supply water is never greater than the highest temperature required for highest temperature sub mix zone calling for heat.
- i. The control shall use a three (3) wire digital communication bus between the boiler and the control panel to allow a 'plug and play' connection using a factory supplied pigtail consisting of a set of A, B and C marked wires with Molex Pins for insertion in each of the boiler control Molex Receptacles.
- j. The control shall be capable of providing priority control and managing the stored water temperature of an indirect fired potable water heating tank using the Vision 1 control

- sensor while still allowing for 8 different temperature set points for (4) different sub mix zones.
- k. The control shall have as standard equipment an LED display, and user interface panel for user developed parameter input for each sub mix zone temperature set point, outdoor reset settings as well as the indirect hot water heater temperature set point with indirect hot water heater temperature display using the factory supplied indirect water heater sensor and all other system status conditions.
 - l. The control shall have a 24V/60/1, 1 amp output to power additional devices that may required.
 - m. The control shall have a maximum 120V/60/1ph 6.3 amp circuit (fused) to power the sub mix zone circulator or circulator relay.
 - n. The control shall have as standard equipment a dip switch assembly that will be used to address up to (4) additional Vision 2 panels.
 - o. The control shall have the ability to be energized with a standard space thermostat signal, outdoor reset control signal or a 0-10 volt signal.
 - p. The control panel shall be equipped with wiring terminal strips that are labeled with each wire connection for easy visibility and connection.
 - q. The 3-way motorized modulating water valve shall be equipped with labeled water and wiring connections.
 - r. The control shall be equipped with a mother board that snaps in and out for easy service without disturbing wired connections.
 - s. The control shall be equipped with 8 external green LED lights to signify Mixed Zone Pumps.
 - t. The control shall have a 4 pin connection for easy connection to a PC using the Vision 2 software.
 - u. The control shall be totally compatible to operate with a Vision 1 or Vision 3 control system.
 - v. The control panel package shall contain the following: (1) Outdoor Sensor (7250P-319), (1) Indirect Water Heater sensor (7250P-325), (1) Supply Temperature Sensor (7250P-324), (3) Bus connection wires marked A, B & C, 1ea. Vision 2 Display Panel, (1) Vision 2 Installation Manual and Wiring Diagrams.
 - w. The submix Zone Package is required for each submix zone used with the Vision 2 control panel and it shall contain: 1 each PWM Motorized Zone Valve no. 7250P-479 1" @ 30CV, 1.25" @ 37 CV, 1.5" @ 37CV or 2" @ 57CV), (1) Supply Temperature Sensor (7250P-324)