



Pump Station Operation

The Pump Station is the central control via the pump PLC for all operation of the entire FanMist Humidity Control System which is a fully integrated sequentially and completely automated to operate at high pressure (1000 psi). The entire system functions to add humidity to your indoor environment maintaining your desired standard for relative humidity control during dry air and/or winter manufacturing conditions.

The FanMist system is completely integrated sequentially by the operation of the PLC (located inside the pump enclosure) controlling the on/off timing of both the pump and fan cycles of operation. The PLC coordinates incoming zone signals from the Neptronic humidistat controller. The zone controller senses the real time humidity when it drops below your set-point and sends a call for humidity to the PLC via a low voltage cable which signals the on/off operation of the pump and fans sequentially. During the on cycle, fans turn on ten seconds ahead of the pump. When humidity is satisfied, fans turn off ten seconds after the pump off signal to make sure all moisture is cleanly evaporated.

Additionally, when the Zone Controller Off signal is received, the PLC will turn “off” the high-pressure pump activating the drain valve – instantly bleeding pressure from the high pressure lines causing all nozzles to close cleanly drip free @ 350 psi.

Water drains via a drain line plumbed to a drain or plumbed back into the treated water supply line to the pump which allows all water to be recycled back into the system; therefore no water is lost to the drain. The drain system is designed where pressure in the line rapidly decreases below 350 psi (the pressure “cracking” point which both opens and closes the nozzles), while maintaining lines filled with water at low pressure during the off cycle. This allows pressure to build instantly on restart for robust pressurization and efficient moisture atomization during the next on cycle.

Pump stations are generally single zone or two zone configurations. Multiple zone pumps (more than 2 zones), are designed with VFD (Variable Frequency Drive) to allow any size zone to operate within a 3 or more zone configuration.

Each zone is controlled by a dedicated Humidistat via 24VAC power provided at the pump which initiates a start and stop signal to the pump PLC from the zone humidistat. Each zone humidistat therefore functions as a controller for all the fans in a zone.

