



Q: How does automated water filling of Scribner 850 humidifiers work?

A: During normal operation, the 850's humidifiers will periodically perform an *automated water fill cycle*. A *water fill cycle* consists of about a dozen water injections (pulses) which are achieved by briefly opening a solenoid valve - there are independent solenoids for each humidifier - which is connected to the pressurized water supply. Therefore, during a water fill cycle, it is common to hear a 'click' sound associated with the humidifier water fill solenoid valve opening briefly every 20 seconds or so. A complete fill cycle takes approximately 4 minutes per humidifier.

The periodic pulsed water injection is intentional: Instead of adding the water all at one time, the automated fill process was designed to minimize the decrease in humidifier temperature that inevitably occurs when adding ambient temperature water to the hot humidifier. By introducing the water in short bursts over a few minutes, the humidifier's temperature controller has time react to the initial dip in temperature, thus minimizing the overall decrease in water temperature and concomitant dew point.

Each humidifier has a low water level sensor. When low water level is detected, a water fill cycle is initiated. If at the end of the water fill cycle, the low water level sensor is not satisfied, say because of a lack of pressurized water supply, the system will display a Low Water Level Alarm.

When the 850 is first powered ON, the system will attempt to fill the humidifiers if low water level is detected. The water filling process on start-up opens the humidifier water fill solenoid until the low water level sensor is satisfied or the system times-out, at which time it will display a Low Water Level Alarm if the low water level sensor is not satisfied.

It is necessary to reset the test system by power-cycling it if a Low Water Level Alarm occurs after the initial power-on fill or the normal pulsed water fill cycle.