

DryMAX Sequence of Operation

Fan Operation

The fan runs continuously when the unit is in the ON mode. This is the recommended setting and the factory default setting for the combination thermostat/humidistat supplied with DryMAX. Continuous fan operation is mandatory in critical humidity control applications such as indoor pools, hydrotherapy, etc. Intermittent fan cycling should be entertained in non-critical comfort applications only.

Compressor Operation (initial start)

The compressor is started on demands for dehumidification, cooling, or heating. An anti-cycle timer is activated to prevent wear on the compressor due to short cycling. Once the anti-cycle time has expired, the compressor is allowed to start.

Dehumidification with Space Cooling

When the air temperature rises above the cooling set point, the compressor starts and the normally closed solenoid valves SV4 (indoor) and SV1 (remote) are energized and open directing the hot gas to the remote air-cooled or water-cooled condenser only. Once the cooling set point is satisfied, and no other demand is activated, the compressor stops and valves close.

Dehumidification with Space Heating

When the air temperature falls below the heating set point, the compressor starts and the normally closed solenoid valves SV3 (indoor) and SV2 (remote) energize and open, directing the hot gas to the reheat condenser only. (Note that a source of auxiliary space heat, sized for building heat loss and ventilation loads, may be necessary to maintain steady state conditions.) Once the heating set point is satisfied, and no other demand is activated, the compressor stops and valves close. A toggle switch in the electrical compartment is provided to prevent unit cycling on a call for a space heating demand without a coincidental call for dehumidification, if desired to prevent over drying of the space.

Auxiliary Heating

A call for the second stage of heating from the thermostat will energize the auxiliary electric heating coil.

Dehumidification with Neutral Air

When the air temperature is above the heating set point and below the cooling set point, the compressor starts on a call for dehumidification and the unit will remove moisture to satisfy demand. Solenoid valves SV3 and SV1 are energized and open. The hot gas will be directed to both the remote condenser and the reheat condenser, in series. The head pressure control will modulate the condenser fan (or the water flow on water-cooled models) to remove a calculated portion of the heat. The remaining heat is available to the reheat condenser to temper the process air, offsetting the sensible cooling of the evaporator and producing dry air without a change in temperature.

Outside Air Ventilation (ducted models only)

On units so equipped, fan operation will induce a preset (with an inline damper) percentage of outside air into the return plenum. If desired, an optional OA damper and exhaust fan (recommended for pool applications) may be controlled via a field supplied relay from the thermostat's "G" terminal.