System Design

EVAPORATOR

SMI SYSTEM DESIGN AND AUTOMATION

SMI Automation offers flexible software, high performance evaporators, proven communication options, accurate weather measurement, supporting equipment and instrumentation, integrated auxiliary equipment, and service that is second to none.

SMI systems can include:

Flexible Software:
SMI's Smart H20 automation software and control system makes it easy to operate your evaporation system with customer settable parameters, enabling the system to be adapted to the specific site and local weather conditions.

High Performance Evaporators Designed for Automation:
SMI offers the PoleCat and 420 product families with various automation levels to fit your needs.

Communications Options:
Our proven radio, fiber optic and hardwire options give you the ability to tie into existing networks for outside access and install the most reliable communication system for your site.

Accurate Weather Measurement:
Includes accurate weather sensors, optional weather tracking software and various power supply options (such as solar power).

Supporting Equipment and Instrumentation:
Our valves, sensors and instrumentation are field-proven for reliability.

SMI SMART H20™ SOFTWARE

Automation will shut down and start up the evaporator and pump based on different weather conditions (wind speed and direction, rainfall, humidity levels and temperature).

An automation system is highly desirable if the water being treated is corrosive or contains chemicals detrimental to the environment or people. The automation system ensures that water droplet drift is controlled so that droplets are deposited in a planned containment area without depending on human operators needing to respond to changing weather conditions.

SMI automation systems for evaporators come in various packages and are priced individually. The typical packages and features are listed below:

Stand Alone Automation Package:
The Stand Alone package is used for smaller systems (1-2 Evaporators) where a machine weather control panel, with HMI touch screen display and user interface, is mounted near shore in an optional SMI control panel shelter, along with weather devices to collect data like wind speed, wind direction, humidity and temperature in order to control the equipment.

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Single unit 420F (floating) Evaporator system with premium automation package

Galvanized control panel shelter with load center and machine control panels

Prefabricated control building shipped to your site complete

Control building interior

SmartH2O Software & Control

Operation: The stand alone package shuts off and starts evaporator(s) and pumps based on weather conditions (usually wind speed, wind direction; temperature and humidity). Speed and direction are set for 8 quadrants of compass. Equipment will shutdown or not start for temperatures below freezing. Shutdown for humidity is defaulted to 80% but is settable based upon specific weather and local experience. The system reacts after the length of time that new weather condition is experienced.

Premium Automation Package:
The premium package is used for systems with 3 or more Evaporators. A Master Control panel is typically located in an optional control building to allow local control and user interface near the equipment. Camera and weather devices are mounted on the control building to provide (wind speed, wind direction, temperature and humidity) inputs to the PLC for equipment control. A communication link is provided from Evaporators to master control panel and master control panel back to desktop PC located in remote control room or office. The desktop PC with SmartH20 software provides equipment control, zoom and pan visual on each Evaporator from camera, monitoring, data storage, alarms, event log, graphing and reporting.

Operation: Same as Stand Alone, plus allows control or setpoint input via computer or a local master control panel. Software can be customized to shutdown equipment due to low water level from customer supplied and installed level (normally an open/closed level sensor).

SMI Evaporative Solutions

SMI Evaporative Solutions
1512 North Rockwell Dr.
Midland, MI 48642
+1.989.631.6091
+1-800-248-6600
evapor.com