

DRY CHEMICAL PROCESSING

A solution for drying bulk solid materials

Application

A chemical manufacturing company needs to mix several different dry compounds to produce their product. Indirect heating is required to remove all moisture that would impact the weight or percentage of each individual compound. Drying at precise temperatures removes volatiles, decreases clumping, and promotes uniform particle sizes. Batch mixing at elevated temperatures promotes the chemical reaction for the final product. A warm air vacuum system is used to move the product through piping to the final packaging area.

Key features required by the customer are ease of operation, communication capabilities for integration into their Central Monitoring System (CMS), flexibility to use various heaters throughout their process, accurate PID control, and expandability to allow for future growth.

Solution

A combination of BriskHeat heaters controlled by the LYNX[®] Temperature Control System meets the needs of this manufacturer and offers many more features and benefits.

Configure-to-Order low watt density silicone rubber heating blankets with built-in foam insulation apply indirect heat to the drying chamber where raw materials are introduced. Silicone tapes are wrapped around the irregular shape of the hopper to preheat prior to adding the dried material. XtremeFLEX[®] BIH Heating Tapes covered with insulation provide heat to the exterior of the batch mixer to ensure the correct temperature is maintained for reaction. Custom cloth heating jackets are used throughout the system to prevent material from absorbing moisture which would result in material accumulating on the inside walls of the piping or valves.

Each heater in the system including blankets, cloth heating jackets, tapes and cords are fitted with, and controlled by individual LYNX[®] Temperature Control Modules. Modules on the drying chamber are operated independently using the 3-button keypad to adjust the setpoint and alarm temperatures. Settings are displayed on the 3-digit display and a high-visibility LED glows green to indicate the heaters are operating as programmed. Blankets and BIH tapes receive power from the LYNX[®] Docking Station assemblies with modules. They are linked together in strings to reduce the number of power connections and provide for remote communication. A Power Harness with communication cable at the beginning of the string can be connected to the LYNX[®] Operator Interface, allowing the technician to access each module from the large touch screen. Custom cloth jackets are similarly linked. Flexibility of the LYNX[®] Temperature Control System allows for strings to be combinations of jackets, tapes, and blankets. The Operator Interface has a connection for using Modbus TCP, allowing the system to be monitored and controlled as part of the Central Monitoring System (CMS).

Additional Uses

BriskHeat's LYNX[®] Temperature Control System can be used to control many process heating applications such as cosmetic manufacturing, food production, pharmaceutical manufacturing, and petrochemical processing. Since it can be used with almost any heating product, LYNX[®] Temperature Control Modules can replace other PID temperature controllers in laboratory facilities, clean industrial environments, and composite repair facilities.



Industries

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|----------------------|-----------------------|
| Agriculture | Life Science/Medical/ |
| Asphalt/Concrete | Pharmaceutical |
| Chemical Processing/ | Manufacturing |
| Extractions | Pulp & Paper |
| Food & Beverage | |
| Processing | |

Types of Users

| | |
|----------------------|-----------------|
| Facility Maintenance | Design Engineer |
| Production Manager | R & D Engineer |
| Process Engineer | Plant Manager |