

## DRYER AUTOMATION SYSTEM

### Process Overview

Drying is an **essential operation** in the chemical, agricultural, biotechnology, food, polymer, ceramics, pharmaceutical, pulp and paper, mineral processing, and wood processing industries. Drying is perhaps the oldest, most common and most diverse of chemical engineering **unit operations**.

Drying occur as a result of **convection, conduction, or radiation** and in some cases as a result of a combination of these effects. **Over 85%** of industrial dryers are of the **convective type** with hot air or direct combustion gases as the drying medium.

The various types of dryers are **Tray Dryer, Fluidised Bed Dryer, Rotary Cone Dryer etc.** The dryers are operated at **Atmospheric pressure or at vacuum**. In API, the bulk drugs obtained are 80% in solid state, these requires effective drying techniques to achieve desired LOD class on drying

### Need For Automation

Drying is a common practice in the pharmaceutical industry in this process, various parameters are to be monitored/ controlled for efficient operation of dryer equipment. An efficient operation of dryer includes-

- Optimal utilization of power
- Continuous monitoring and controlling of parameters like temperature, vacuum etc.,
- Reduction in Utility resource wastage
- To enhance process safety effects

The automation/ control system is to be implemented to perform the above said operations and alert the operator for immediate action on the deviated parameter.

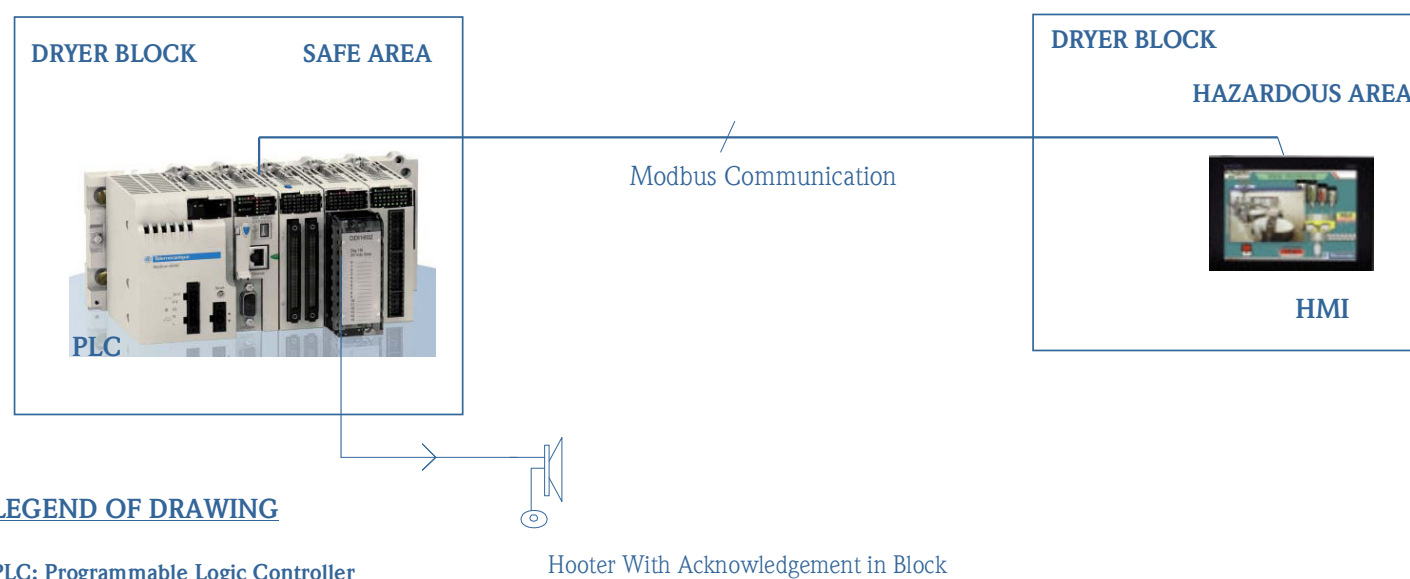
### System Components Control System (Software- Hardware) HMI, SCADA

A **control system** with Open architecture design provides complete flexibility, high performance & ease of operation to the end user. The high-performance processor is considered which is capable of multi-tasking, best memory management & high reliable. **Remote I/O modules** for far spread blocks, **HMI's** at various production blocks for ease of operation. Remote process monitoring is performed by **SCADA** and various management information reports.

The system uses advanced software tools and components to build the necessary logic for better process controlling and process. The software includes features like Graphics, Trending, History and reports on customized formats.

An **internal FAT** will be conducted on the Panel Engineered & simulation test will be conducted at our in-house to analysis right logic & controlling developed in the system to ensure stringent control.

### System Architecture



### System Components Field Instruments (Sensors, Transmitters, Control Elements)

The better controlling needs effective sensors to read the process, transmitters to send the read parameters to control system, better logic to address and best control element to execute. The hooters & annunciators, alarms on process deviation. The precise controlling enhances the accuracy of the system. The performance of the system is dependant on the Instruments.

The field instruments used in the projects is from **POLMON manufactured** instruments or **from the reputed manufactures**. The instruments used are **tested at our in-house** and sent to end-user after checking to ensure product quality.

### System Benefits

- Precise parameter controlling
- Enhances Operation safety
- Manages Operational Cost
- Immediate operator attention on parameter deviation
- Reduced batch failure due to operator negligence on parameter deviation
- Achieving Regulatory Requirements
- List of Error diagnostics messages

**More Information**  
For more information on POLMON solutions, contact your POLMON account manager

Mr. R.Srinivas  
DGM – Automation  
Mob No.: +919849695950  
E-Mail Id: srinivasraavi@polmon.com

**POLMON Instruments Pvt. Ltd.,**  
'POLMON HOUSE', Nizampet Road  
Kukatpally, Hyderabad – 500072  
Tel : 040-23053046, 23055970, 23057642