

CENTRIFUGE AUTOMATION

Process Overview

In pharmaceutical industry, the centrifuges are preferred **mechanical separation** technique. In centrifugal sedimentation the separation is due to the **difference in the density** of two or more phases. The principle used in the mechanical separations is called centrifugal filtration and **centrifugal sedimentation**. The process is widely used for **separating crystals and granular** products from other liquors. A typical batch filter consists of a perforated metal basket mounted on a vertical axis. After separation retain solids is often supported on a metal screen Baskets mounted as shown are emptied by shoveling the **cake**. Centrifuge brings down the moisture content in the material. The cake withdrawn is washed to improve purity & close the pores.

Need For Automation

The **Centrifuges** are widely used in Pharmaceutical Industry; the mass is dumped into centrifuge after the completion of chemical reaction in the reactor vessel. The rate of separation depends on the **rate at which the centrifuge rotates**. The automation of centrifuges mainly focuses on the **controlling of centrifuge rotation**. The **Cake washing** after the cake removal is an important operation in the Centrifuge. The **addition of solvent** and period of exposure can be automated by the system. The **loading of mass** can also be automated. The aim of these is to **minimize the manual operation** & make the operator ease on operation. This makes the **process efficient and adheres to the quality systems and abides to the regulatory requirements**.

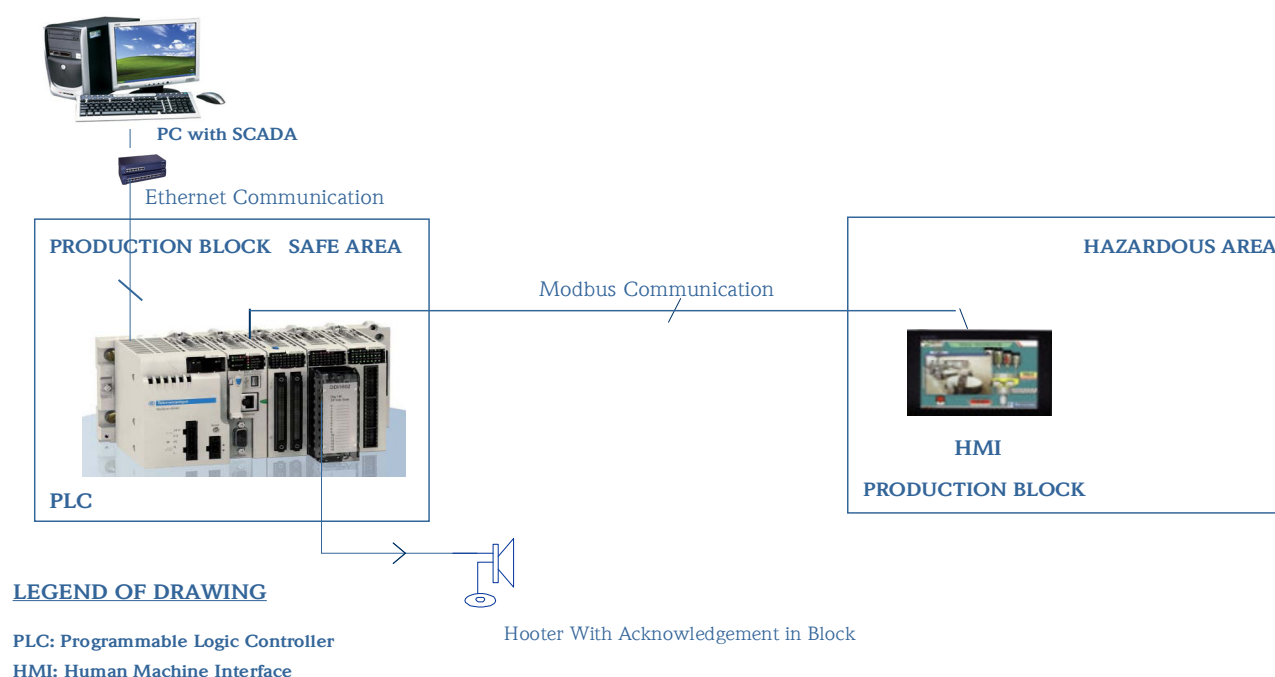
System Components Control System (Software- Hardware) HMI, SCADA

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

- Greatly Reduces Manual Operations
- Increases separation efficiency.
- Effectively Utilizes Power Resources
- Immediate operator attention on parameter deviation
- Prevents unauthorized access of the system
- List of Error diagnostics messages

More Information

For more information on POLMON solutions, contact your POLMON account manager

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