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Industrial Controls (1)

By



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Lecture (4)
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Outline

- **What is a PLC?**
- **Why Use PLCs?**
- **What are the Main Components of PLC?**
- **On Inputs and Outputs**
- **On the Control Program**



What is a PLC?

PLC → Programmable Logic Controller

or programmable controller,

Or

المتحكم المنطقي القابل للبرمجة

So, what is it?

It is a Microprocessor-Based device used to control equipment in industrial applications



What is PLC

- PLC is a digital computer designed for multiple inputs and outputs arrangements, extended temperature ranges, immunity to electrical noise, and resistance to vibration and impact.
- A PLC is an example of a real time system.

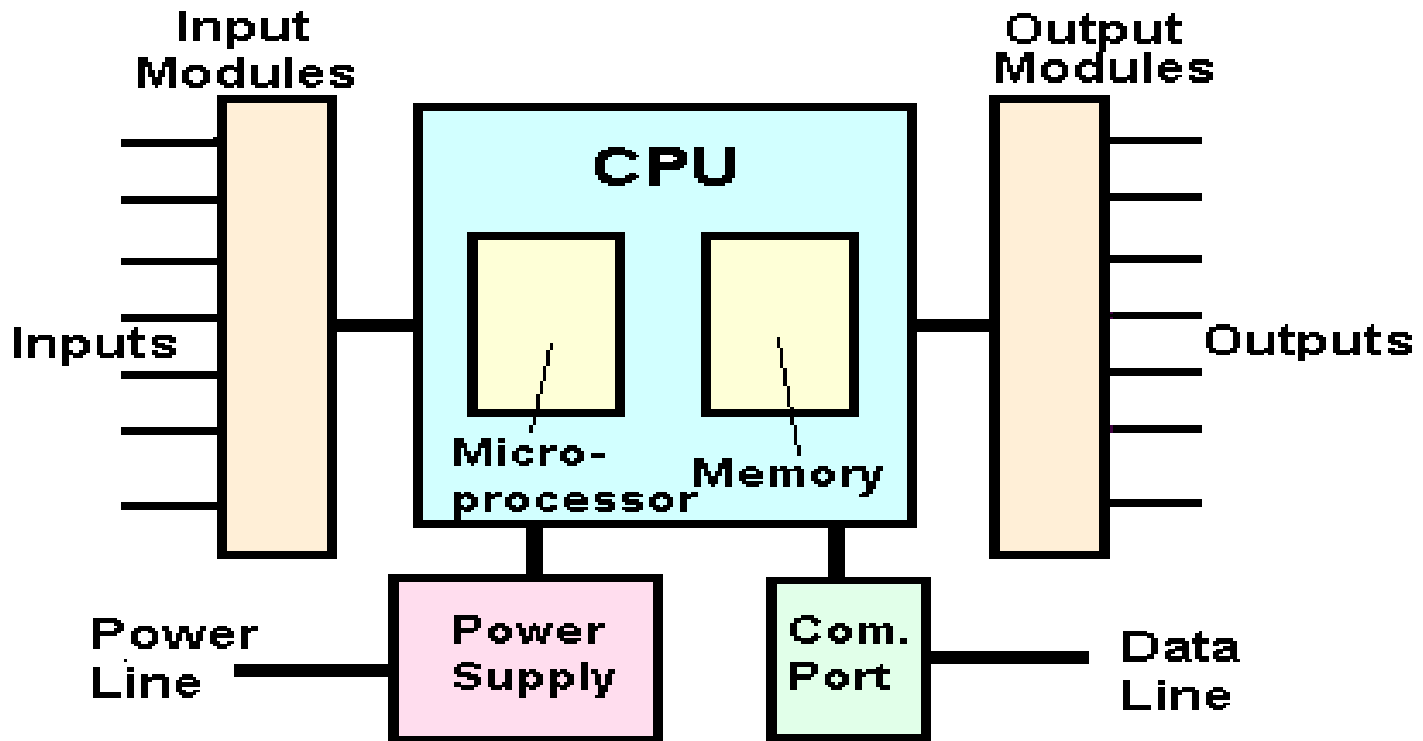


Traditional concept of PLC

- PLC performs relay equivalent functions.
- PLC performs ON / OFF control.
- Designed for industrial environment.



Major components of a common PLC

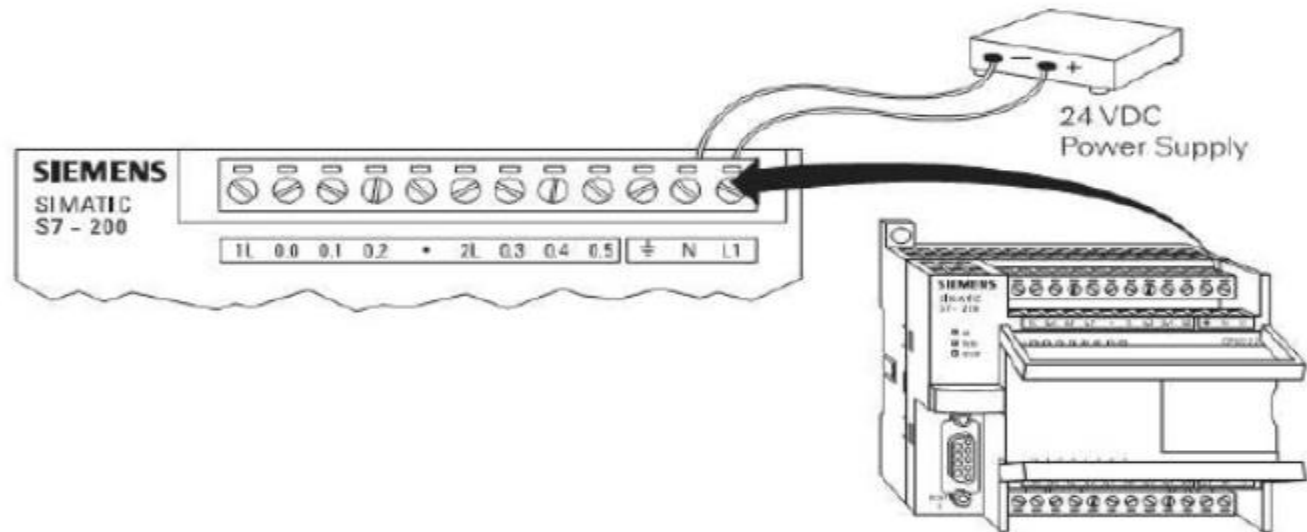


PLC Components



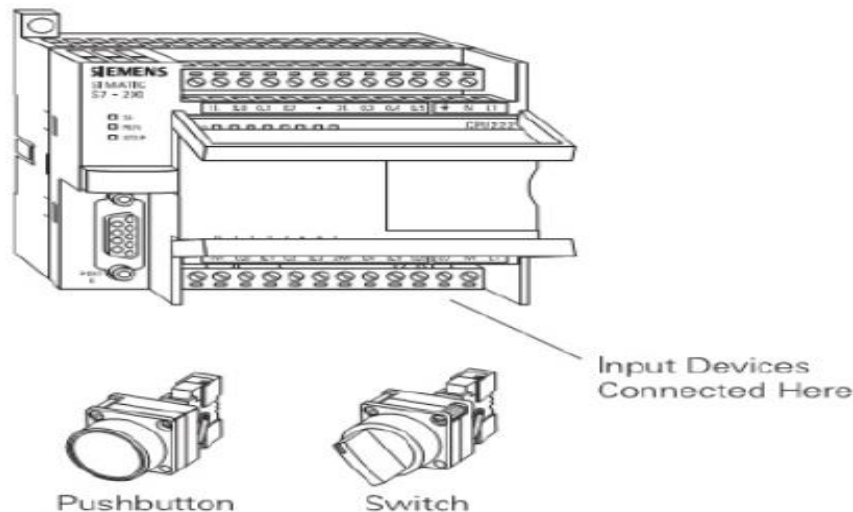
1. Power supply

- Provides the voltage needed to run the primary PLC components.
- is needed to convert the mains A.C voltage to low D.C. Voltage.



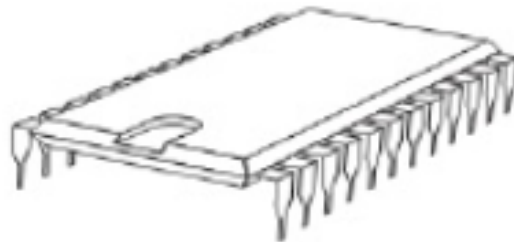
2. I/O Modules

- Provides signal conversion & isolation between the internal logic level signals inside the PLC and the fields high level signal.
- are where the processor receives information from external devices and communicates information to external devices.



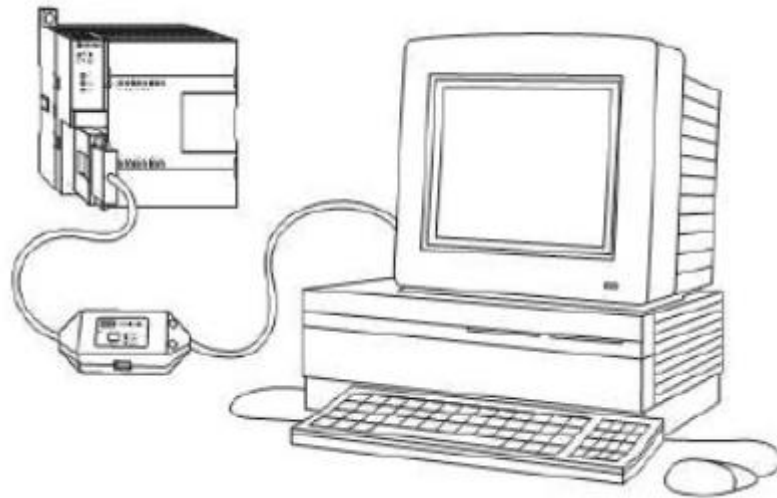
3. Processor

- Provides intelligence to command and govern the activities of the entire PLC systems.
- is the unit containing the microprocessor.



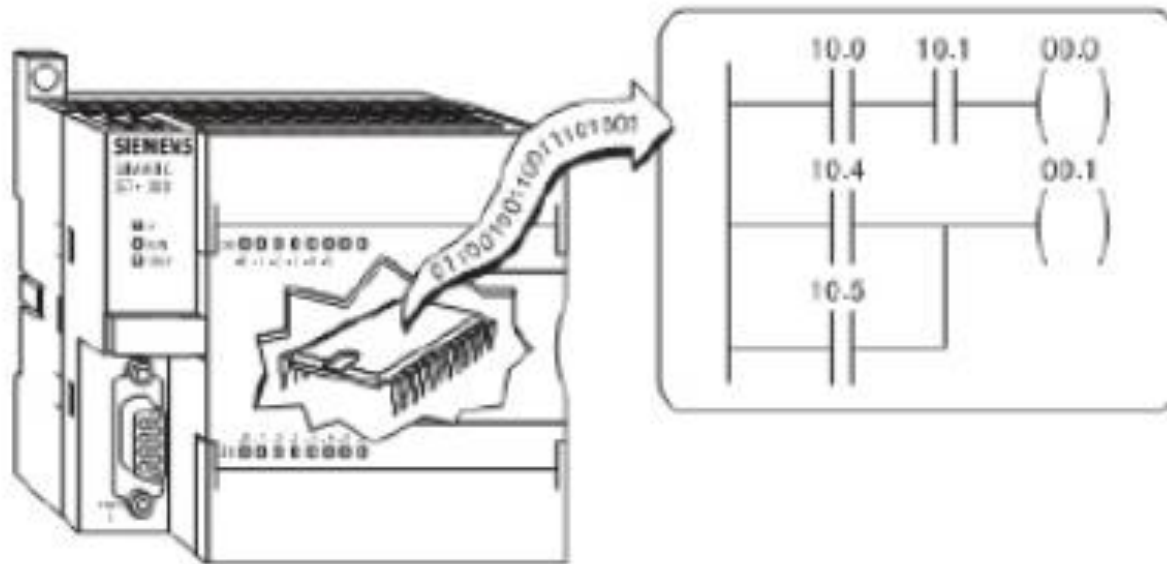
4. Programming device

- Used to enter the desired program that will determine the sequence of operation and control of process equipment or driven machine.
- is used to entered the required program into the memory of the processor.



5. Memory unit

- is where the program is stored that is to be used for control actions.



Thank You
For Your Attention



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