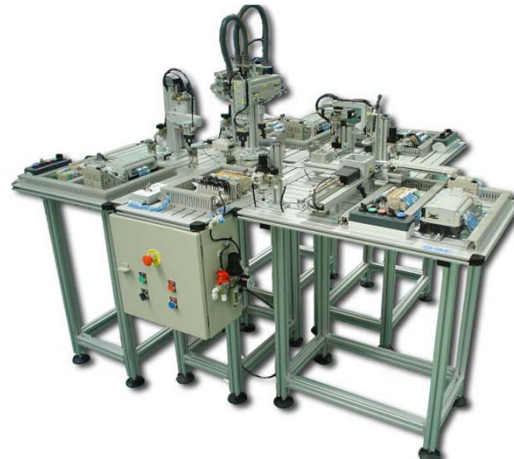


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## MODULAR ASSEMBLY SYSTEM MAS-200



## Module 2: PLC programming Structure

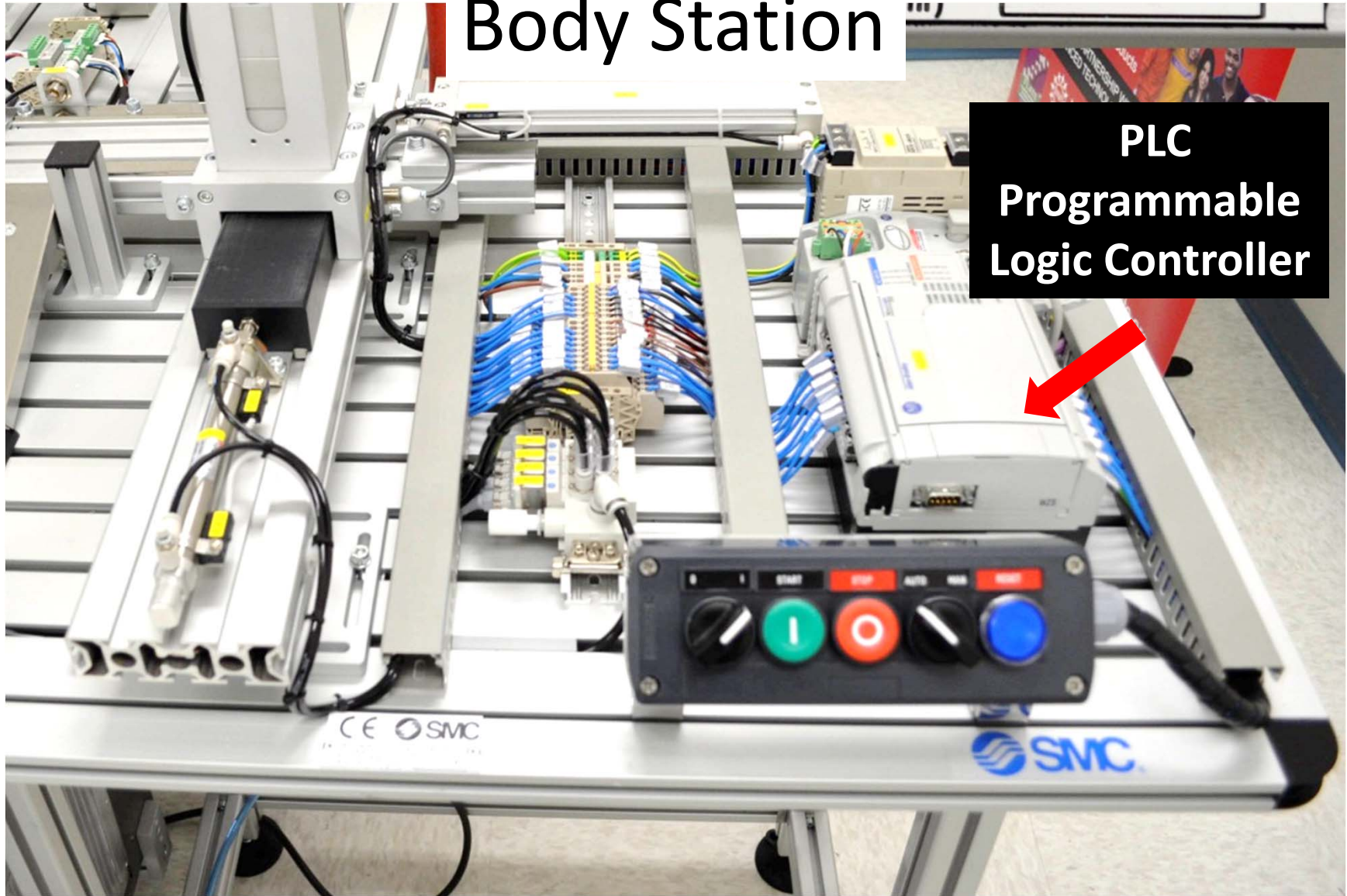
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# Body Station

PLC  
Programmable  
Logic Controller



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# ***What is a PLC?***

PLCs are ruggedized microcomputers with hardware and software specifically designed to perform industrial control operations. A PLC consists of two basic sections: **The CPU (central processing unit)** controls all PLC activity and can further be broken down into processor and memory system components

**The input/output interface system** is physically connected to field devices such as switches, sensors, lights, and motors, and provides the interface between the CPU and the field devices (inputs and outputs)

PLCs are used to control machines or processes that are sequential in nature. PLCs can also control continuous processes that use analog I/O.

## PLC-

The PLC is a purpose-built machine control computer designed to read digital and analog inputs from various sensors, execute a user defined logic program, and write the resulting digital and analog output values to various output elements like hydraulic and pneumatic actuators, indication lamps, solenoid coils etc.

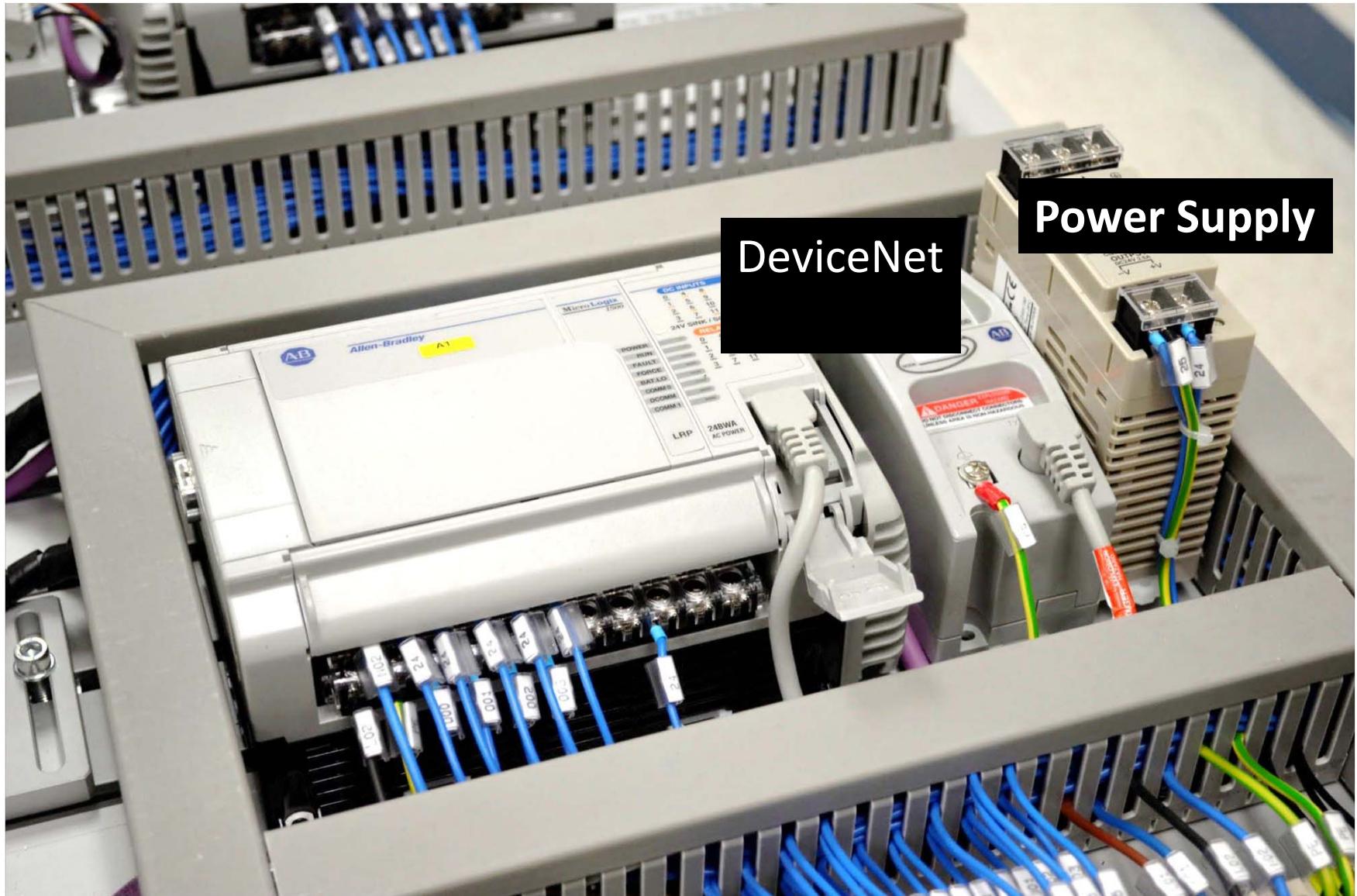
# PLC Programming Structure

- The system uses a single PLC on each station
- The MAS utilizes Allen-Bradley Micrologix 1500 processors.
- Required software:
  - RSLogix 500 programming software
  - RSLinx communication Software
- Communication network DeviceNet

- **PLC Feel**

- Modular footprint, industrial reliability
- Wide array of I/O modules and system configurations

A programmable logic controller (PLC) or programmable controller is a **digital computer used for automation of electromechanical processes, such as control of machinery on factory assembly lines, amusement rides, or light fixtures.** PLCs are used in many industries and machines. Unlike general-purpose computers, the PLC is designed for multiple inputs and output arrangements, extended temperature ranges, immunity to electrical noise, and resistance to vibration and impact. Programs to control machine operation are typically stored in battery-backed-up or non-volatile memory. A PLC is an example of a hard real time system since output results must be produced in response to input conditions within a bounded time, otherwise unintended operation will result.

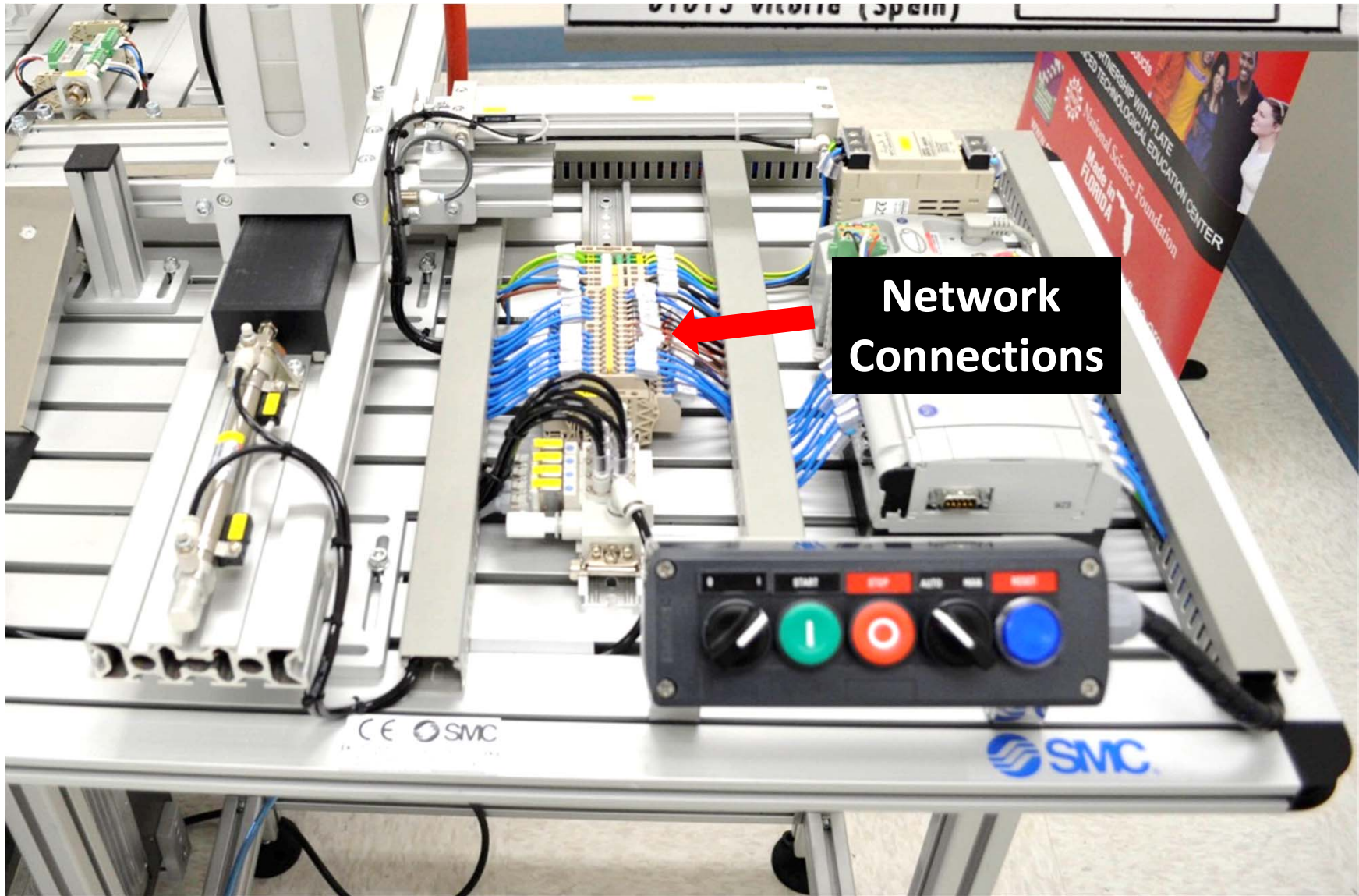


DeviceNet

Power Supply

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**Micro Logix**

1500

**DC INPUTS**

0	4	8
1	5	9
2	6	10
3	7	11

24V SINK / SOURCE

**RELAY OUTPUTS**

0	4	8
1	5	9
2	6	10
3	7	11

POWER

RUN

FAULT

FORCE

BAT.LO

COMM 0

DCOMM

COMM 1

LRP

24BWA  
AC POWER

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