

■ PLC & Automation Complete Reference Guide

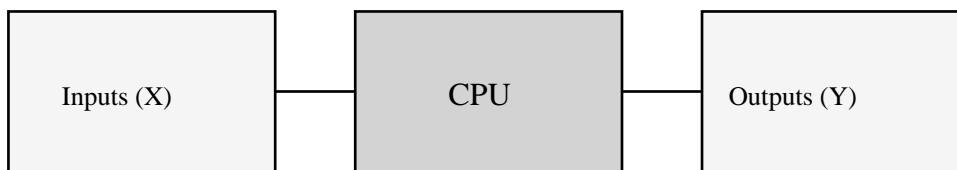
1. PLC Brands

- Mitsubishi (Mitsu) → Common industrial PLC brand.
- Delta → Cost-effective, widely used in small/mid-level automation.
- Old systems → Xinjia, etc. (rarely used now).

2. Delta PLC (DVP ES2 Series)

- Power Supply: 24V DC.
- I/O Configuration:
 - Digital Inputs (X)
 - Digital Outputs (Y)
 - Expandable I/O modules: 32 I/P, 32 O/P.
- High-Speed Inputs: For encoder/fast signals.
- Pulse Outputs: For stepper/servo drives.
- I/O Modes: Sink / Sourcing.

PLC Block Diagram



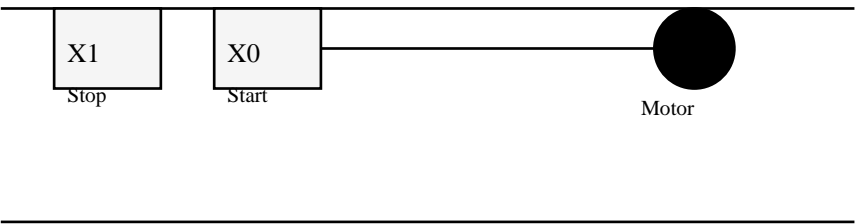
3. Communication

- Ethernet → For modern networking.
- Modbus RTU → Common industrial protocol.
- Other Notes: Multiple communication types supported.
- Cost references: Rs 425, Rs 235 (likely for modules/software/licenses).

4. Programming

- WPL Soft (Delta) → PLC programming software.
- ISP Soft → Another Delta PLC programming tool.
- Programming Language: Ladder Logic (LD).
- Inputs = X, Outputs = Y (naming convention).

Sample Ladder Logic (Start/Stop Motor)



5. HMI (Human-Machine Interface)

- Software: DOPSoft (Delta).
- Used to design operator screens.

6. Servo & Motion Control

- Delta ASDA Servo Drive.
- Controls servo motors (used for precision motion).
- Works with PLC pulse outputs for positioning.

Servo Drive Connection



7. Logic Basics

Input A	Input B	Output
0	0	0
0	1	0
1	0	0
1	1	1

8. I/Os

- Digital I/Os → ON/OFF type (switches, relays).
- Analog I/Os → Continuous signals (temperature, pressure, etc.).