Programmable Logic Controllers

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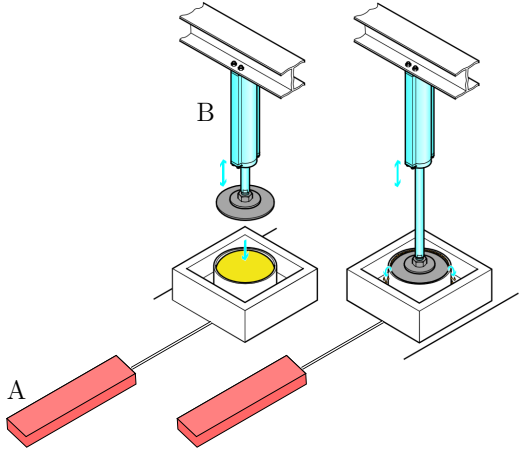
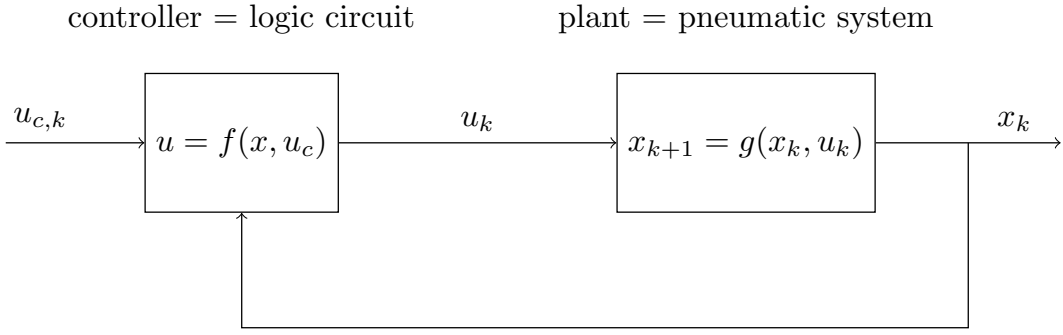
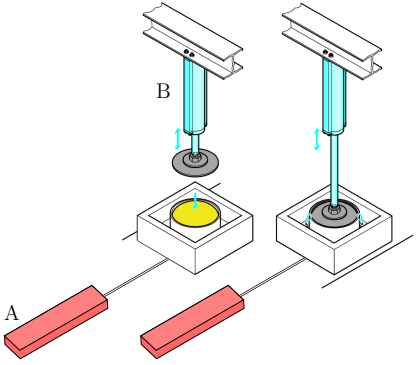
Pressing cheese



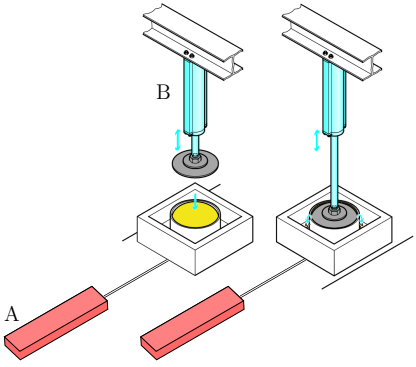
A logic control loop

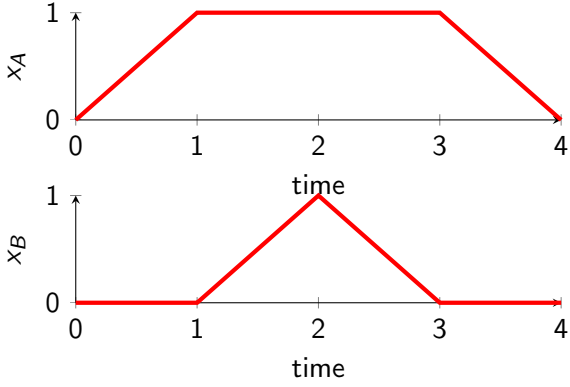


Pressing cheese

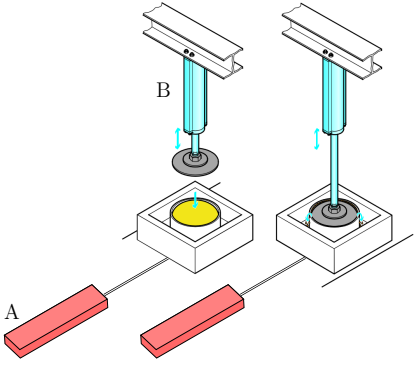


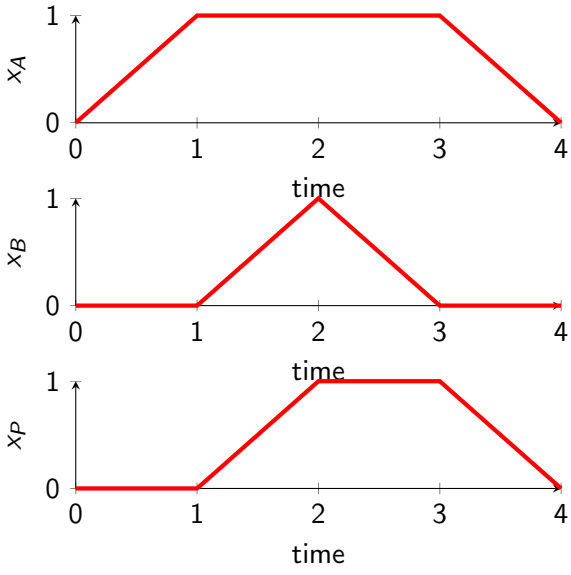
Pressing cheese





Pressing cheese





The Siemens S7 series PLC

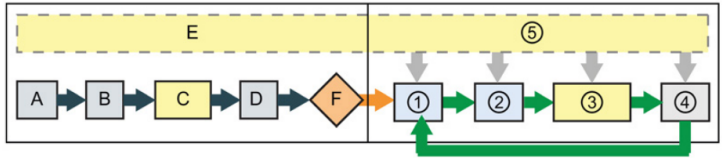
From Siemens

Programming

Three ways to program the Siemens s7 series

1. Ladder diagram (LAD)
2. Function Block Diagram (FBD)
3. Structured Control Language (SCL)

Execution



STARTUP

- A — Clears the I (image) memory area
- B — Initializes the Q output (image) memory area with either zero, the last value, or the substitute value, as configured, and zeroes PB, PN, and AS-i outputs
- C — Initializes non-retentive M memory and data blocks to their initial value and enables configured cyclic interrupt and time of day events.

  Executes the startup OBs.
- D — Copies the state of the physical inputs to I memory
- E — Stores any interrupt events into the queue to be processed after entering RUN mode
- F — Enables the writing of Q memory to the physical outputs

RUN

- ① — Writes Q memory to the physical outputs
- ② — Copies the state of the physical inputs to I memory
- ③ — Executes the program cycle OBs
- ④ — Performs self-test diagnostics
- ⑤ — Processes interrupts and communications during any part of the scan cycle

PLC Ladder diagrams

Equivalent to circuit diagram for control logic using relays

Basics

A cascade