Lógica de Controle

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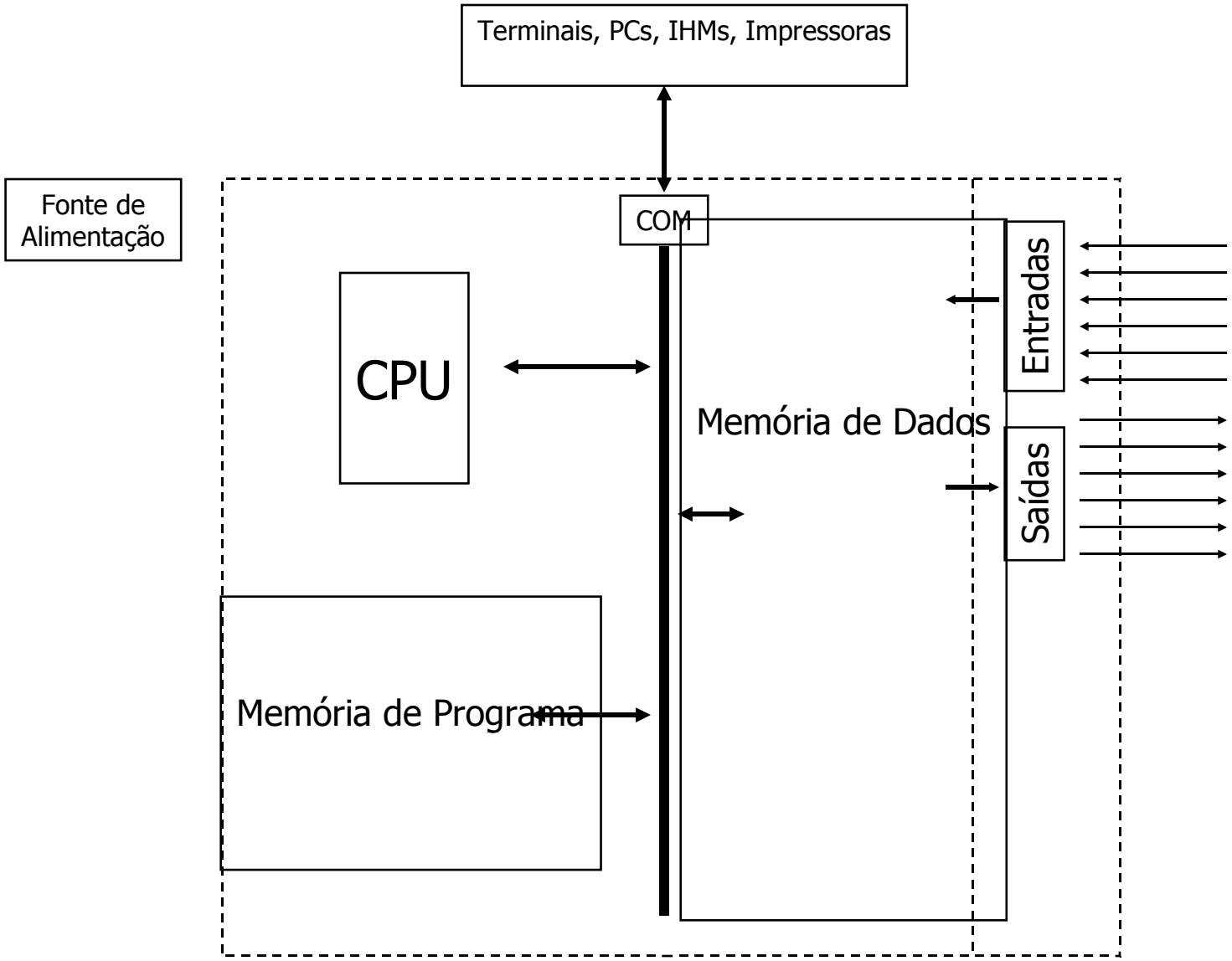
CLPs

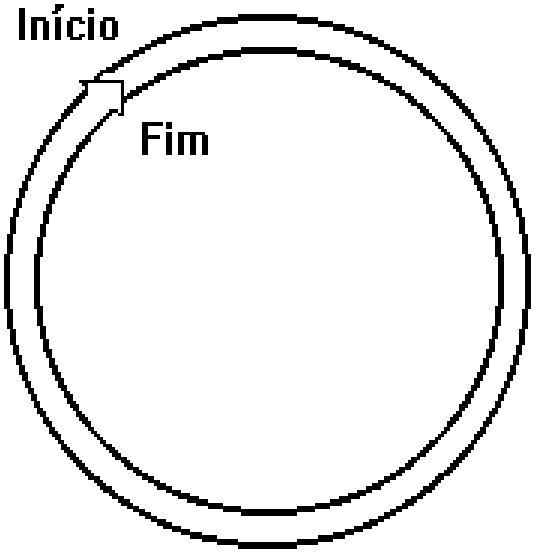
Vantagens do uso de Controladores Lógicos Programáveis

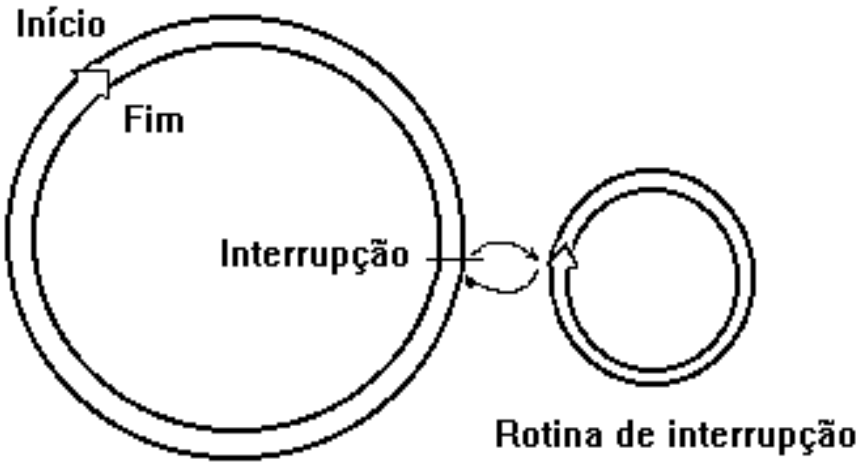
- Ocupam menor espaço;
- Requerem menor potência elétrica;
- Podem ser reutilizados;
- São programáveis, permitindo alterar os parâmetros de controle;
- Apresentam maior confiabilidade;
- Manutenção mais fácil e rápida;
- Oferecem maior flexibilidade;
- Apresentam interface de comunicação com outros CLP's e computadores de controle;
- Permitem maior rapidez na elaboração do projeto do sistema.

Arquitetura do CLP



CPU





Ciclo normal de programa

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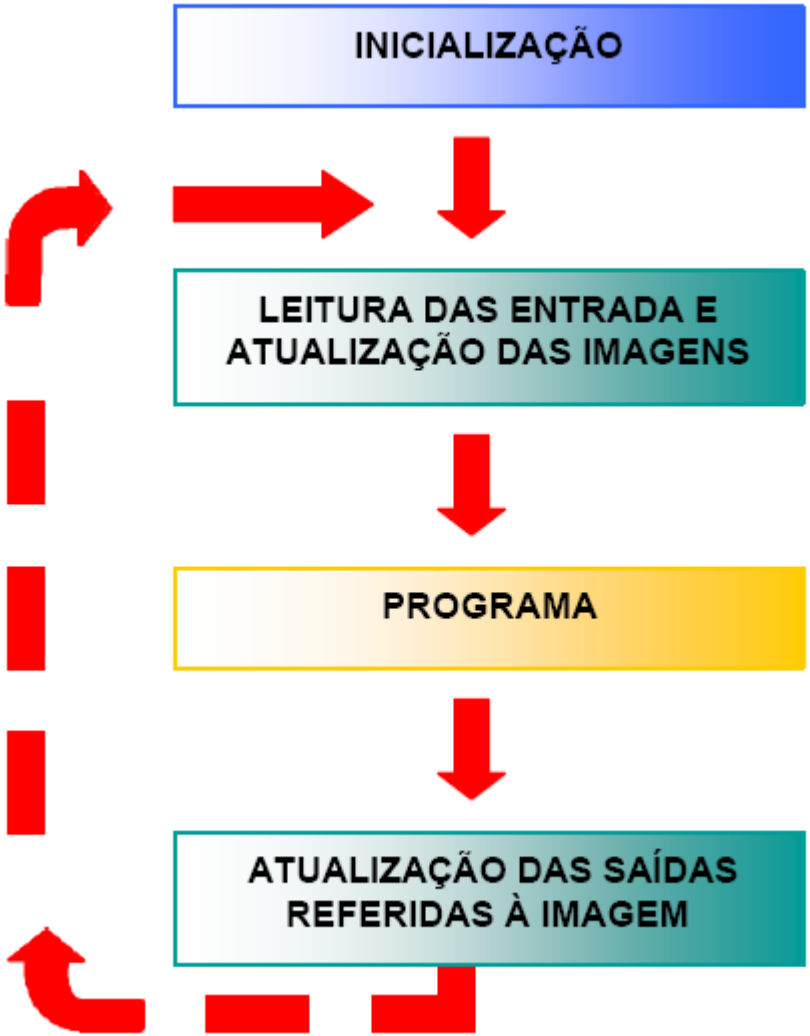
CPU



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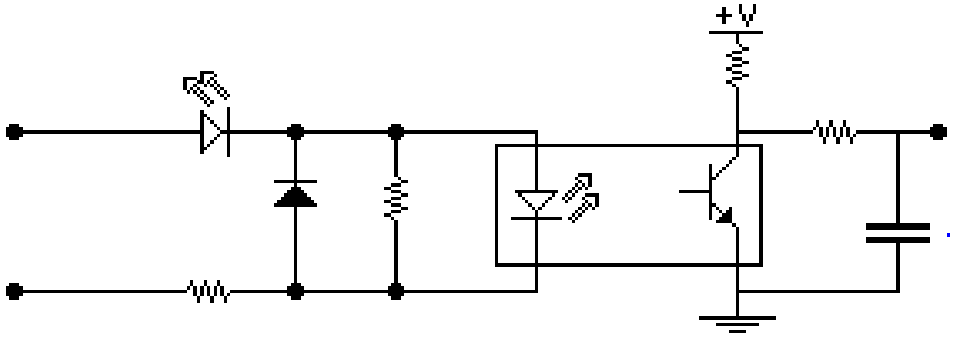
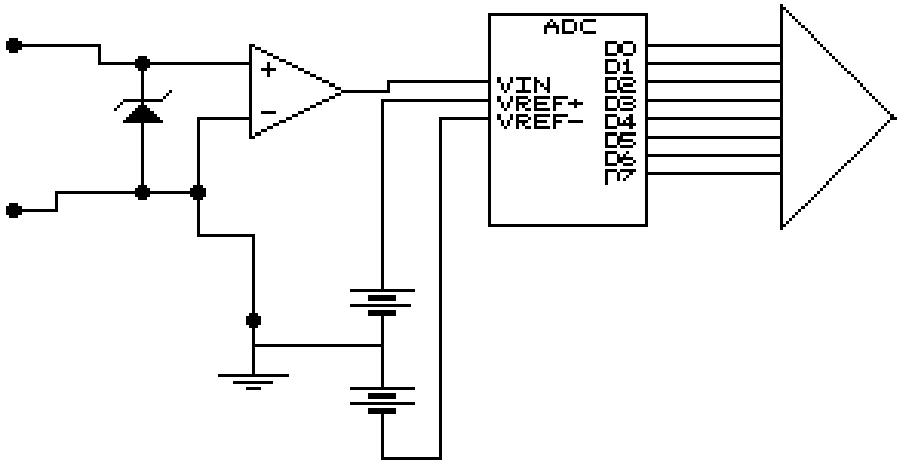
Memória

Tipo de Memória	*Descrição*	*Observação*
RAM DINÂMICA	Memória de acesso aleatório	- Volátil - Gravada pelo usuário - Lenta - Ocupa pouco espaço - Menor custo
RAM	Memória de acesso aleatório	- Volátil - Gravada pelo usuário - Rápida - Ocupa mais espaço - Maior custo
ROM MÁSCARA	Memória somente de leitura	- Não Volátil - Não permite apagamento - Gravada pelo fabricante
PROM	Memória programável somente de leitura	- Não volátil - Não permite apagamento - Gravada pelo usuário
EPROM	Memória programável/ apagável somente de leitura	- Não Volátil - Apagamento por ultravioleta - Gravada pelo usuário
EPROM **EEPROM** **FLASH EPROM**	Memória programável/ apagável somente de leitura	- Não Volátil - Apagável eletricamente - Gravada pelo usuário

Entradas

Entrada Digital

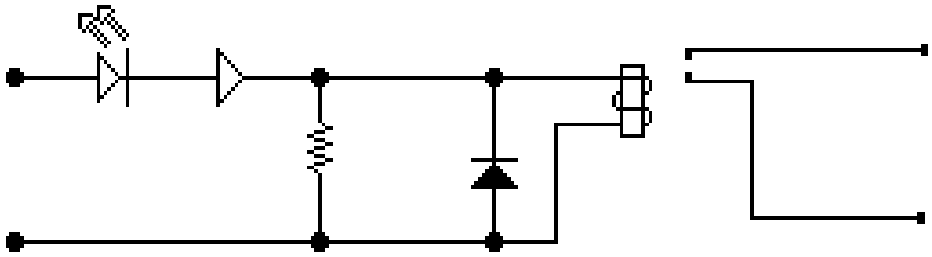


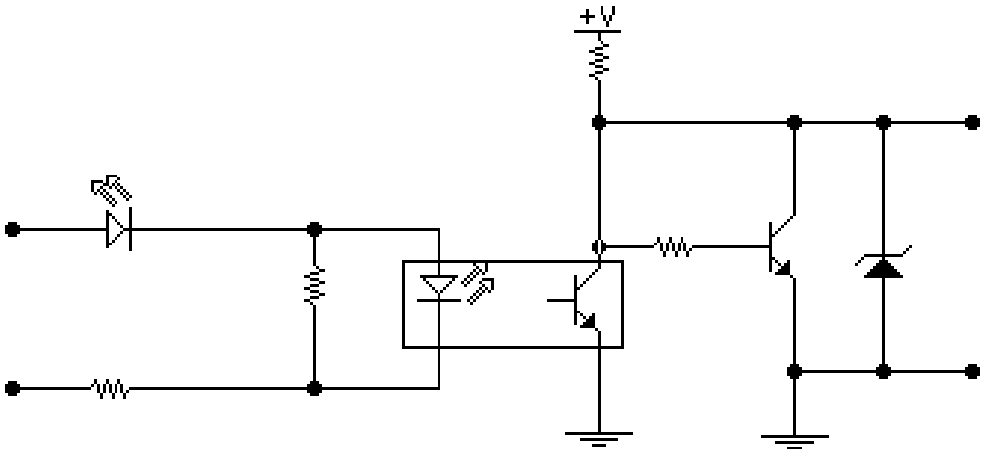


Entrada Analógica

Saídas

Saída Digital
à Relê





Saída Digital
à Transistor

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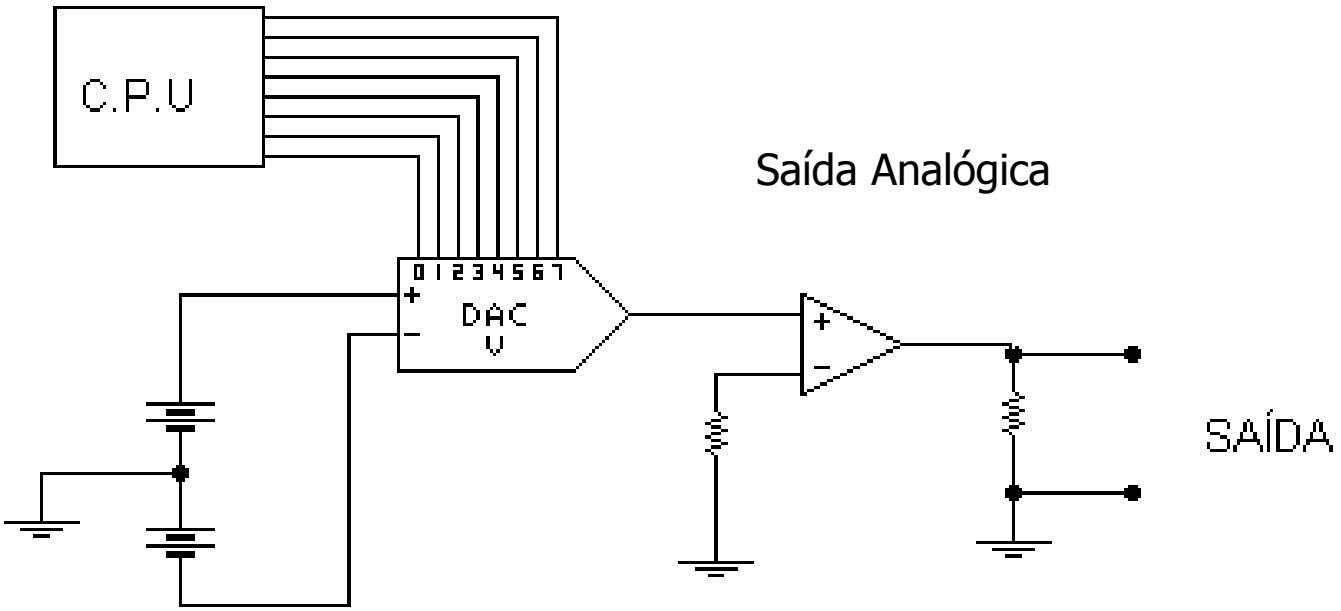
Saídas



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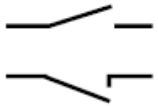
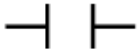
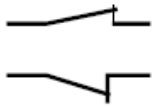
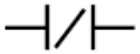
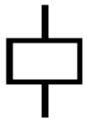
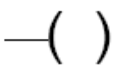
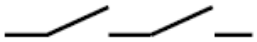
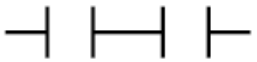
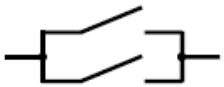
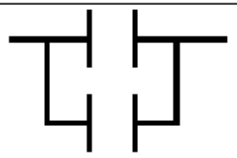
Linguagem Ladder

Contactor		Instruction on the PLC/ corresponding function
	Scan: Is current flowing ? If yes, then the result of the scan is true. (Result is "1")	
	Scan: Is no current flowing ? If yes (no current), then the result of the scan is true. (Result is "0")	
	Coil: If the value "true" (current) is passed to a coil it is activated (The coil starts up).	
	Series circuit: (AND logic). The first switch AND the second switch must be closed in order to pass current.	
	Parallel circuit (OR logic). The first switch OR the second switch must be closed in order to pass current.	

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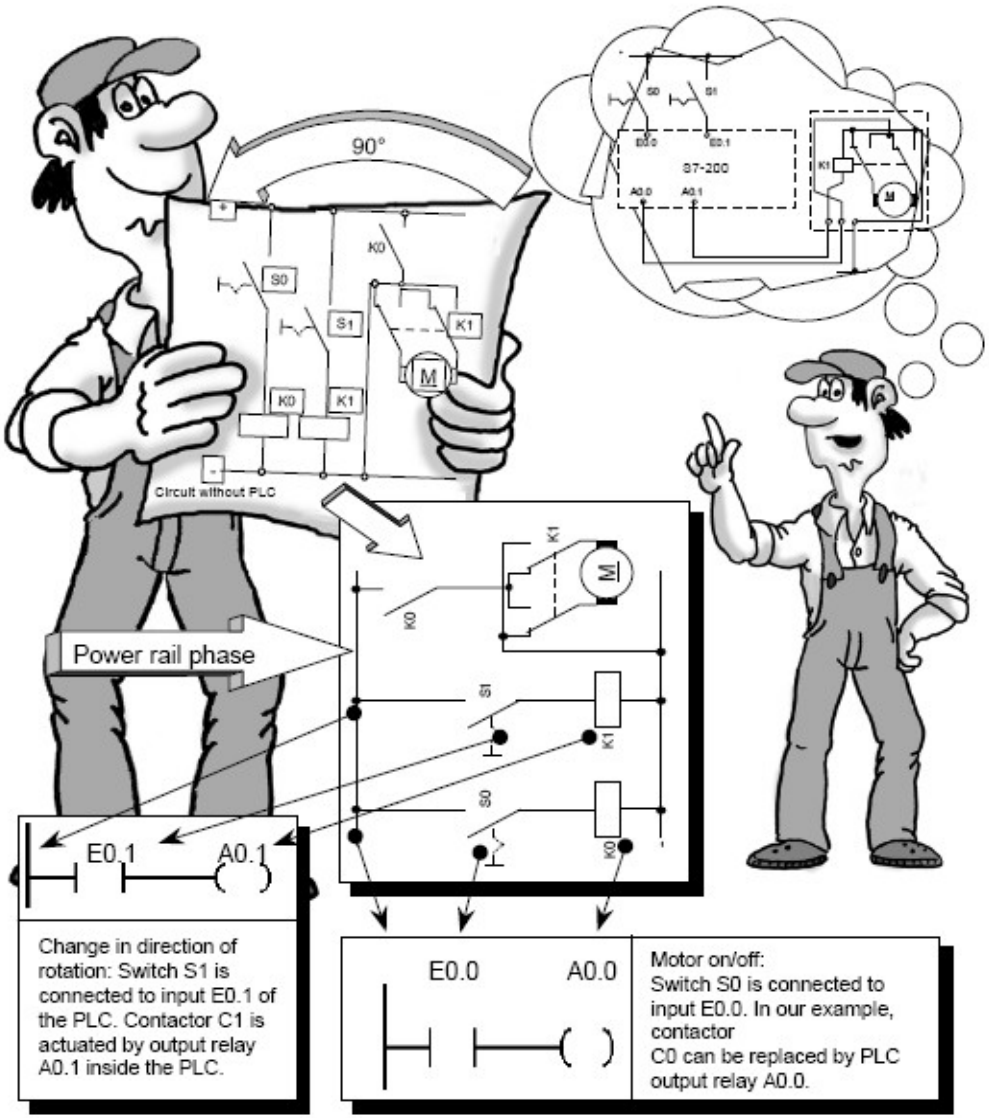
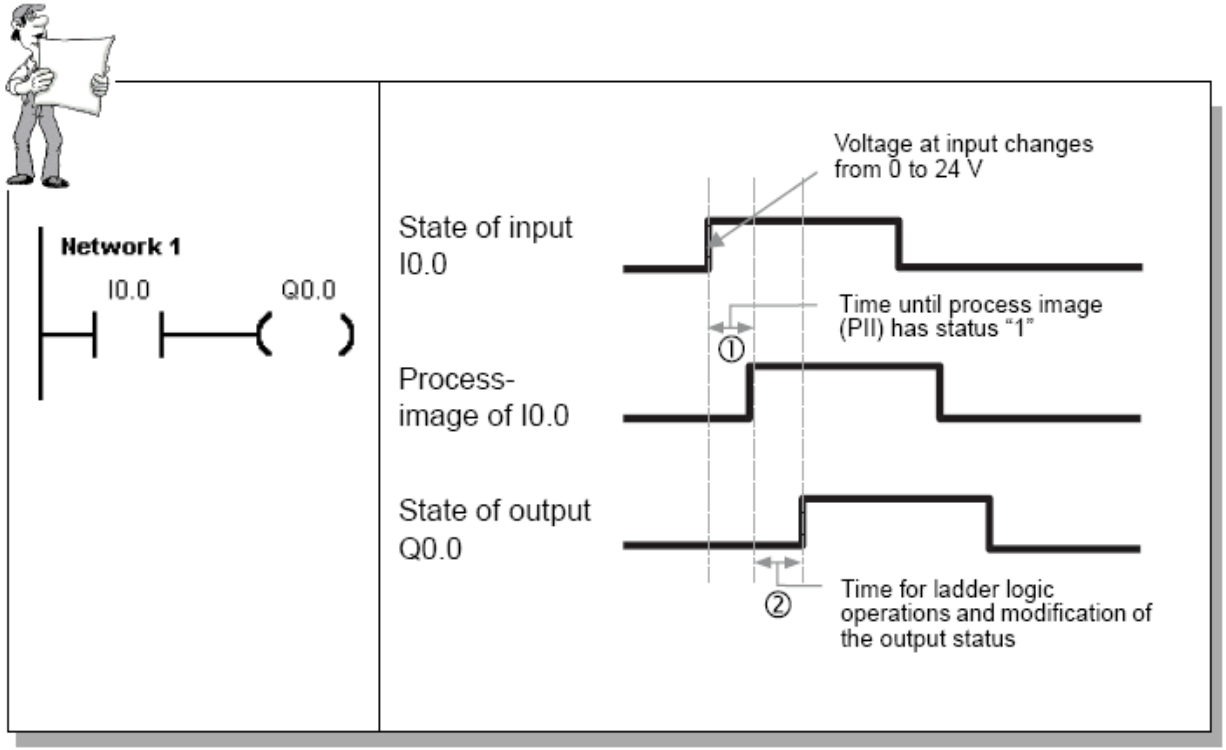
Linguagem Ladder



Linguagem Ladder



Linguagem Ladder