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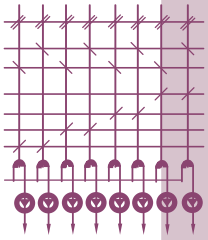
CODING

LADDER LOGIC DIAGRAMMING



CONCEPT

Ladder Logic Diagramming is a language used to program programmable logic controllers (PLCs) in industrial automation systems. It consists of a series of graphical symbols representing various electrical and logical functions, such as contacts, coils, timers and counters.

EXAMPLES

The essential components/forms related to Ladder Logic Diagramming are:

CONTACTS: Contacts are input elements in ladder logic diagramming that represent physical switches, push-buttons or sensors that can either be in an open or closed state.

COILS: Coils are output elements in ladder logic diagramming that represent physical devices such as relays, solenoids or motors that can either be in an on or off state.

TIMERS: Timers are time-based functions used in ladder logic diagramming to delay the operation of a device or to trigger it after a specified time interval.

COUNTERS: Counters are used in ladder logic diagramming to count the number of events or operations and trigger an output when a certain count is reached.

LOGIC GATES: Logic gates such as AND, OR and NOT gates are used in ladder logic diagramming to create complex logical expressions.

BRANCHES: Branches are used in ladder logic diagramming to split the logic flow into multiple paths.

POWER RAILS: Power rails are the vertical lines on the left in ladder logic diagramming that provide the voltage for the logic elements.

RUNGS: Rungs are the horizontal lines in ladder logic diagramming that represent a single logical operation or expression.

BACKGROUND

Ladder logic programming or ladder diagramming was developed in the 1960s as a graphical programming language for industrial automation systems. It was originally based on the relay logic diagrams used in electrical control systems, but quickly evolved to include more complex logic functions such as timers, counters and logic gates. Ladder Logic Diagramming became the dominant programming language for programmable logic controllers (PLCs) in the 1980s and has remained popular ever since due to its simplicity, flexibility and ease of use. Today, it is an essential component of most industrial automation systems, and its use continues to grow as more advanced PLCs are developed.

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