1.2 Electrical circuit diagram

The electrical circuit diagram for a control system shows how the electrical control-system components are connected to one another and interact. Depending on the application concerned, the following types of circuit diagrams are used, as defined by DIN/EN 61082-2:

- Block diagram
- Function diagram
- Electrical circuit diagram.

1.2.1 Block diagram

A block diagram provides an overview of the electrical equipment within a large system, such as a packaging machine or assembly line. The diagram shows only the most important interrelationships. The various sub-systems are shown in greater detail in other diagrams.

1.2.2 Function diagram

The function diagram shows the individual functions within a system. It does not indicate how these functions are carried out.

1.2.3 Detailed electrical circuit diagram

The detailed electrical circuit diagram shows the details of systems, installations, equipment, etc. It contains the following:

- The graphical symbols for the equipment
- The links between these pieces of equipment
- The equipment ID codes
- The connection ID codes
- Other data required in order to trace paths (signal ID codes, notes on the place of representation used).

1.2.4 Assembled and detached modes of representation of electrical circuit diagrams

In the case of an assembled circuit diagram, each piece of equipment is shown as a coherent symbol, even in the case of, for example, a relay that has several normally-open and normally-closed contacts.

With a detached circuit diagram, the various components of a piece of equipment may be shown at different places. They are arranged in such a way as to produce a tidy straight-line representation with only a few line and cable crossovers. The normally-open and normally-closed contacts of a relay, for example, may be shown distributed over the entire circuit diagram.

1.2.5 Electrical circuit diagram for an electropneumatic control system

In electropneumatics, a detached circuit diagram is used to show the signal control section of the system. An additional block diagram or function diagram will be produced only in the case of very complex control systems.

In practice, the term "electrical circuit diagram for an electropneumatic control system" always means a detailed electrical circuit diagram.