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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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Replacing GB/T 21654-2008

GRAFCET specification language for sequential function charts

顺序功能表图用GRAFCET规范语言

(English Translation)

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References

Explain element

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document supersedes GB/T 21654-2008 "Sequence Function Charts Using GRAFET Standard Language", and is consistent with GB/T 21654-2008.

In comparison, aside from structural adjustments and editorial changes, the main technical changes are as follows.

- a) Added the terms internal variables, input variables, and output variables (see 3.1);
- b) Added descriptions of system order, etc. (see 4.1);
- c) The content of Figure 1 has been changed (see 4.1, 2008 version 4.1);
- d) The content of the action at the progress of the action number [29] in the stored actions in Table 6 has been deleted (see Chapter 5 of the 2008 edition).

This document adopts IEC 60848:2013 "Sequence function table diagrams using the GRAFCET specification language".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Technical Committee on Standardization of Electrical and Information Structures, Documentation and Graphic Symbols (SAC/TC27).

Introduction

This document is primarily intended for personnel who need to define the control and commands of system behavior (such as automation systems, safety components, etc.).

(Design engineers, maintenance engineers, etc.). This specification language also serves as a means of communication between designers and users of automated systems.

Sequential function charts using the GRAFET specification language

1 Scope

This document specifies the GRAFCET specification language for functionally describing the behavior of the sequential parts of a control system.

This document also specifies the symbols, rules, and descriptions for the graphical representation of this language.

This document applies to automated production systems for industrial applications, but does not exclude any specific application areas.

The development methodology of specifications using the GRAFCET specification language is not covered in this document. For example, IEC 61131-3 (specification) the set of programming languages for programmable logic controllers (PLCs) defines one method of the "SFC language," which specifies the programming language for PLCs.

A collection of programming languages.

Note: For more information on the relationship between this document and the execution language (such as the SFC language in IEC 61131-3), see Appendix C.

2 Normative references

This document has no normative references.

3 Terms and Definitions

The following terms and definitions apply to this document.

Note: The definitions of terms in 3.1 apply only to the context of the GRAFCET specification language.

3.1 Terminology in Grafette

3.1.1

action

The GRAFCET language element related to steps is used to represent activities performed on output or internal variables.

3.1.2

Directed link

The GRAFCET language element represents the evolution path between steps, connecting steps to transitions and vice versa.

3.1.3

grafcet table chart grafcatchart Functional diagrams using the GRAFCET specification language.

Note: "grafcet chart" is abbreviated as "grafcet".

3.1.4

input event

An event characterized by a change in at least one value of all input variables in the sequential part of the system.

3.1.5

Internal events

An event characterized by an input event related to the state of the sequential part of the system.