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**Transitions, pulses and related waveforms - Terms, definitions
and algorithms**

过渡、脉冲和相关波形 术语、定义和算法

(English Translation)

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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 adopts IEC 60469:2013 "Transition, Impulse and Dependent Waveforms - Terminology, Definitions and Algorithms".

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 by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Electrical Instruments and Meters (SAC/TC104).

Introduction

This document is an equivalent of IEC 60469:2013 and aims to promote accurate communication of parameters for transitions, pulses, and other waveforms, and to establish methods for measuring these waveforms.

The techniques and procedures for parameterization. Because electrical pulse technology is widely used in the electronics industry (such as computers, telecommunications, and testing instruments), pulse terminology...

Clear definitions and corresponding methodologies/algorithms need continuous development, which is crucial for effective communication between electronics manufacturers and consumers.

Important. The availability of standard terminology, definitions, and calculation methods helps improve product quality and assists consumers in better comparing different products.

The continuous improvement of digital waveform recording devices (including oscilloscopes) facilitates waveform capture, sharing, and processing; these devices typically possess this document provides automatic waveform processing and pulse parameter calculations, requiring no additional user intervention. It can also be used in a wider range of scientific and industrial fields.

In engineering applications, such as optics, cosmology, seismology, and medicine, the applicable range extends from single-frequency, individual responses to high-frequency repetitive signals, and from bandwidths less than...

Signals ranging from 1 Hz to over 1 THz. Therefore, a standard is needed to ensure consistency in the definition and calculation methods of pulse parameters.

IEC 60469-1 covers the terminology and definitions of waveform parameters, while IEC 60469-2 describes the waveform measurement process. The purpose of this document is...

Based on the content of IEC 60469-1 and IEC 60469-2, the terminology was updated, errors were corrected, an algorithm for calculating pulse parameter values was added, and a...

A newly developed method for calculating state levels. Two main changes compared to IEC 60469-1 and IEC 60469-2 are the parameter definitions and calculation methods.

The changes include adding new terms and definitions, deleting unused terms and definitions, expanding the list of unused terms, and more.

New and revised existing definitions. This document contains definitions for approximately 100 terms commonly used to describe waveform measurement and analysis processes and waveform parameters.

Many terms in IEC 60469-1 and IEC 60469-2 have been completely removed or deprecated. IEC 60469:2013 retains the deprecated terms.

To demonstrate continuity with IEC 60469-1 and IEC 60469-2. Terms should be discarded when they cannot be clearly or accurately defined.

Misuse, misinterpretation, and misunderstanding are common in terminology, making the development of a universally accepted set of terms and definitions the biggest challenge, a legacy issue for instrument manufacturers.

The issues and commonly used terminology also urgently need to be addressed. IEC 60469:2013 has also facilitated the formation and development of certain waveform parameter calculation methods.

These algorithms are all helpful or beneficial to users of the standard. To date, there is no universally applicable and communicable standard for parameters and their calculation methods.