

ICS 25.040
CCS N 10



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

GB/T 27960-2011

Ethernet POWLINK communication profile specification

以太网POWERLINK通信行规规范

(English Translation)

Issued on: December 30, 2011

Implemented on: July 1, 2012

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China**

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Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the re-drafting method to modify the technical specifications of the POWERLINK International Organization for Standardization (EPSG).

DS301 "Ethernet POWERLINK communication profile specification" (V1.1.0).

This standard is structured with EPSGDS301 "Ethernet POWERLINK communication specification" (V1.1.0) Under adjustment.

- the preparation of the preamble of this standard;
- Prepare Chapter 3 terms, definitions and abbreviations for this standard in accordance with EPSGDS301 (V1.1.0) Pre.8 definitions and abbreviations;
- According to the standard text of the reference to other standards and EPSGDS301 (V1.1.0) Pre.9, the preparation of the normative standards Reference documents and references;
- Chapter 1 of EPSGDS301 (V1.1.0) is the fourth chapter of this standard and the subsequent text of the subsequent text is arranged.

This standard has also made the following editorial changes.

- Deleted EPSGDS301 (V1.1.0) Preface (Pre.1 ~ Pre.9).

This standard is proposed by the Machinery Industry Federation.

This standard is nationalized by the National Industrial Process Measurement and Control Standardization Technical Committee (SAC/TC124).

The drafting of this standard. mechanical industry instrumentation integrated technology and economic research institute, Shanghai Automation Instrumentation Co., Ltd., Shenzhen step Technology Co., Ltd., Southwest University, Tsinghua University, Shenyang Institute of Automation, Chinese Academy of Sciences, Shandong University, Beijing Jiaotong University, Shanghai Industry Automation Instrumentation Research Institute, B & R

Industrial Automation (Shanghai) Co., Ltd.

1 Scope

POWERLINK is a communication profile for real-time Ethernet (RTE). It is based on GB/T 15629.3 standard Ethernet entry Line expansion, so that the transmission of data with predictable timing and precise synchronization mechanism.

The POWERLINK communication profile is designed for high performance automation and motion applications to meet the demanding real-time requirements of these applications.

2 Normative reference documents

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article Pieces. For undated references, the latest edition (including all modifications) applies to this document.

GB/T 15629.3-1995 Information processing systems - Local area networks - Part 3. Carrier - controlled multiple access with collision detection (CS -MA/CD) access method and physical layer specification (idtISO /IEC 8802-3.:1990) GB/T 15969.3-2005 Programmable controllers - Part 3. Programming languages (IEC 61131-3.:2002, IDT) EPSGDS302-A Ethernet POWERLINK Part A. High Availability (V1.0.0) [EthernetPOWER-LINK, PartA. HighAvailability (Version1.0.0)] EPSGDS302-B Ethernet POWERLINK Part B. Multi-Asynchronous Transmission (V1.0.0) [EthernetPOWER-LINK, PartB. Multiple-ASnd (Version1.0.0)]

3.1 Terms and definitions

The following terms and definitions apply to this document.

3.1.1

Aging

Aging is a common mechanism for maintaining (caching) tables. Unused or unread entries will be removed after a specified period of time.

3.1.2

Application Process

The application process is a task on the application layer.

3.1.3

Only asynchronous CN Async-onlyCN Work in the isochronous time slot, it is not MN periodic access; in the asynchronous phase, through the StatusRequest message round Asked the CN.

3.1.4

AsynchronousData AsynchronousData There is no strict data on the POWERLINK network for time. Keep a specific phase in the POWERLINK cycle Used for asynchronous data, which is shared by all nodes. Each node connected to the network can send a different request from the management node Step data. The management node saves a list of all asynchronous data requests, and then grants access to the network to each node.