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Industrial field communication quality inspection - General technical specifications

工业现场通信质量检测 通用技术规范

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting is required.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the 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 for Standardization of Industrial Process Measurement, Control and Automation (SAC/TC 124).

This standard was drafted by: Mechanical Industry Instrumentation Comprehensive Technical and Economic Research Institute, Shanghai University of Electric Power, Beijing Dingshi Innovation Technology Co., Ltd.

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General technical specifications for industrial field communication quality testing

1 Scope

This document specifies the key indicators for communication quality detection of industrial communication networks when they are running in industrial sites, and describes the detection methods and The detection process gives the types of industrial field communication failures and factors affecting communication quality.

This document is applicable to the detection, fault diagnosis and troubleshooting of industrial field communication quality of industrial communication networks other than industrial wireless networks.

2 Normative references

This document has no normative references.

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Industrial communication equipmentindustrial communication device

Control devices, field devices, and network devices with industrial communication capabilities developed according to specific industrial communication protocols.

Note. Control devices include programmable logic controllers (PLCs), distributed control systems (DCSs), industrial computers (IPCs) and other programmable control devices and data Monitoring equipment such as SCADA and HMI; field equipment including sensors, transmitters, actuators, remote Input/output (I/O) devices, etc.; network devices include gateways, etc.

3.2 Communication qualitycommunication quality

The degree to which network communications are effective in meeting users' communication needs.

Note. Includes completeness, timeliness, reliability and accuracy, etc.

3.3 Bus powered

Communication and device power are provided on one cable.

Note. Process industries generally require bus power.

3.4 periodic communication

cyclic communication The process of repetitively exchanging packets of data between devices at regular intervals.

3.5 Aperiodic communication

acyclic communication The process of exchanging data packets between devices at irregular intervals.

3.6 cyclic data

Cyclic Data Data packets exchanged between devices in repetitive packets at regular intervals.