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Intelligent Manufacturing - Radio Frequency Identification System - General Technical Requirements

智能制造 射频识别系统

通用技术要求

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Intelligent Manufacturing - Radio Frequency Identification System - General Technical Requirements

1 Scope

This Standard specifies the composition of intelligent manufacturing-oriented radio frequency identification system, as well as the general technical requirements for RFID tag, reader-writer and middleware, etc.

This Standard is applicable to the design, development and application of intelligent manufacturing-oriented radio frequency identification system.

2 Normative References

The following documents are indispensable to the application of this document. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 6107-2000 *Interface between Data Terminal Equipment and Data Circuit Terminating Equipment Employing Serial Binary Data Interchange*

GB/T 29261.3-2012 *Information Technology - Automatic Identification and Data Capture (AIDC) Techniques - Vocabulary - Part 3: Radio-frequency Identification*

GB/T 29266-2012 *Radio Frequency Identification - 13.56 MHz Tag Basic Electrical Characteristics*

GB/T 29768-2013 *Information Technology - Radio Frequency Identification - Air Interface Protocol at 800/900 MHz*

GB/T 32830.3-2016 *Manufacturing Process for Equipment Manufacturing - Radio Frequency Identification - Part 3: System Application Interface Specification*

GB/T 33848.3-2017 *Information Technology - Radio Frequency Identification - Part 3: Parameters for Air Interface Communications at 13.56 MHz*

GB/T 34047-2017 *Reference Architecture of Information Integration Middleware Platform for Internet of Things in Manufacturing Processes*

GB/T 34996-2017 *Specification of the 800/900 MHz Radio Frequency Identification*

c) The user area shall have the functions of data storage, data writing and data reading. The format of the stored data shall comply with the requirements of GB/T 38670-2020;

d) In accordance with the demands of the application scenario, the integration with the sensor shall be implemented;

e) It shall have relatively strong anti-interference against the metal environment and electromagnetic interference in the application scenario;

f) The installation mode shall be firm; the installation position shall not affect the manufacturing activities;

g) In accordance with different application scenarios of intelligent manufacturing, HF tag or UHF tag may be selected. The air interface protocol of the HF tag shall comply with the requirements of GB/T 33848.3-2017; the electrical characteristics shall comply with the requirements of GB/T 29266-2012. The air interface protocol of the UHF tag should comply with the requirements of GB/T 29768-2013; the other performances shall comply with the requirements of GB/T 36365-2018.

6.3 RFID Reader-writer

The requirements for RFID reader-writer are as follows:

a) It shall have the functions of normal inventory, reading and / or re-writing tag data, etc.;

b) The storage capacity and data retention time of the memory shall be indicated in the product instruction;

c) It shall have the capability of offline working;

d) It shall have the function of industrial field bus access;

e) It shall have the function of filtering the read tag data and screening redundant information in accordance with the set filtering conditions;

f) It shall have the function of communicating with the middleware; it shall have the capability of uploading reading information, statistical information and fault information to the middle; it shall have the function of receiving the middleware's configuration management information;

g) It shall have interface functions, such as: information query, parameter configuration, device instructions, reading and writing commands, and status report, etc. In terms of parameter configuration, it shall implement configuration management on the air interface parameters and network

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