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

GB/T 16656.238-2013

**Industrial automation systems and integration -- Product data
representation and exchange -- Part 238: Application Protocol:
Application interpreted model for computerized numeric controllers**

工业自动化系统与集成 产品数据表达与交换 第238部分：应用协议：计算机数值
控制器用的应用解释模型

(English Translation)

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Foreword

GB/T 16656 "Industrial automation systems and integrated product data representation and exchange" is a multi-part of the standard, the various parts Published separately. GB/T 16656 belongs to the various parts of the composition of a number of sub-series, namely.

- Parts 1 to 19 specify the method of description;
- Articles 20 to 29 provide for the realization of the method;
- Section 30 to 39 provide for conformance testing methods and frameworks;
- sections 40 to 59 provide for the integration of general resources;
- Parts 100 to.199 provide integrated application resources;
- Application requirements are provided in sections.200 to 299;
- Section 300 to 399 provide an abstract test suite;
- the application modules are specified in sections 400 to 499;

- Articles 500 to 599 provide for the application of the interpretation structure;

--- Section 1000 to Part.1999 specifies the application module.

GB/T 16656 "Industrial automation systems and integrated product data representation and exchange" has been released and will be released including the following section.

- Part 1. Overview and Fundamentals;

- Part 11. Description Method. EXPRESS Language Reference Manual;

- Part 21. Implementation method. the pure text encoding of the exchange file structure;

- Part 28. Implementation method. EXPRESS schema and XML expression of data (using XML schema);

- Part 31. Conformance testing methodology and framework. basic concepts;

Part 32. Consistency Testing Methodology and Framework. Requirements for Testing Laboratories and Customers;

Part 34. Consistency Testing Methodology and Framework. An abstract test method for implementing protocol implementation;

- Part 41. Integration of general resources. product description and support principles;

- Part 42. Integration of general resources. geometric and topological expression;

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- Part 49. Integration of general resources. process structure and characteristics;

- Part 51. Integration of general resources. Mathematical expression;

- Part 54. Integration of general resources. classification and set theory;

- Part 55. Integration of general resources. process and mixed expression;

- Part 56. Integration of general resources. status;

- Part 101. Integrated application resources. Drawing;

- Part 105. Integration of Applied Resources. Kinematics;

- Part.201. Application protocol. explicit drawing;

- Part 202. Application protocol. Related drawings;

- Part 203. Application protocol. Configuration control design;

Part 238. Application protocol. Application interpretation model for computer numerical controllers;

- Part 501. Application Interpretation Construction. Edge - based wireframe;

- Part 502. Application Interpretation Construction. shell - based wireframe;

- Part 503. Application Interpretation Construction. Geometrically bounded two - dimensional wireframe;

- Part 504. Application Interpretation Construction. Drawing Notes;

- Part 505. Application Interpretation Structure. Pattern structure and management;

- Part 506. Application Interpretation Construction. Drawing elements;

- Part 507. Application Interpretation Construction. Geometrically bounded surfaces;

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- Part 509. Application Interpretation Construction. Manifolds;

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- Part 520. Application Interpretation Construction. Related Drawing Elements;

- Part 1001. Application module. Appearance assignment;

- Part 1002. Application modules. color;

- Part 1003. Application modules. Curve appearance;

- Part 1004. Application modules. basic geometry;

- Part 1005. Application modules. Basic topology;

- Part 1006. Application modules. Fundamental expression;

- Part 1007. Application modules. Generic surface appearance;

- Section 1008. Application modules. layer assignment;

Part 1009. Application modules. shape appearance and layer.

This part is part 238 of GB/T 16656.

This part is based on the rules given in ISO/IEC 1.1-2009.

This part is equivalent to ISO 10303-238.:2007 "Industrial Automation Systems and Integrated Product Data Representation and Exchange Section 238 . Application protocol. Application model for computer numerical controllers ", whose technical content and structure are maintained with ISO 10303-238.:2007 Consistent.

In this part of the normative reference to the international documents have a consistent correspondence between the following documents.

Geometrical product specifications (GPS) - Limits and mating - Part 1. Tolerances, deviations and mating - GB/T 1800.1-2009 (ISO 286-1. 1988, MOD) Geometrical product specifications (GPS) - Limits and mating - Part 2. Standard tolerances and Hole, shaft limit deviation table (ISO 286-2. 1988, MOD) Industrial automation systems and integration - Product data representation and exchange - Part 1. Overview and basis - GB/T 16656.1-2008.

The principle (ISO 10303-1.:1994, MOD) Industrial automation systems and integration - Product data representation and exchange - Part 11. Descriptions - GB/T 16656.11-1996.

Law. EXPRESS Language Reference Manual (eqvISO /DIS10303-11.:1993) Industrial automation systems and the integration of product data - Representation and exchange - Part 21. Implementation of ISO/IEC 16656.21-2008.

Method. Exchange file structure of the pure text encoding (ISO 10303-21.:2001, IDT) Industrial automation systems and integration - Product data representation and exchange - Part 47. Integration Resources. Shape Tolerance (ISO 10303-47.:2000, IDT) GB/T 17851-1999 Tolerances and Benchmarks for Shape and Position Tolerances (eqvISO 5459. 1981) this section makes the following editorial changes.

--- delete the ISO preface;

- For underlined boldface entity names, attribute names, and function names for the EXPRESS language description, in order to maintain its English original intention, in this part of the use of English name, only when it as a title, before the English name to increase its attribution type Description.

This part is made by the China Machinery Industry Federation.

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Introduction

GB/T 16656 (ISO 10303) is a computer-readable technical standard for product information presentation and product data exchange.

The goal is to provide a neutral mechanism for the product lifecycle that is independent of any particular system and capable of describing product data. Its description Function is not