

ICS 25.040.01

CCS N 10



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

GB/T 34044.2-2017

**[Including 2021XG1] Automation systems and integration -- Key
performance indicators (KPIs) for manufacturing operations
management -- Part 2: Definitions and descriptions**

Issued on: July 31, 2017

Implemented on: February 1, 2018

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

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Foreword

GB/T 34044 "automation systems and integrated manufacturing operations management key performance indicators" to be divided into the following sections.

- Part 1. Overview, concepts and terminology;
- Part 2. Definition and description;
- Part 3. Interaction and use;
- Part 4. Contact and subordinate.

This section GB/T 34044 Part 2.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section uses the translation method identical with ISO 22400-2:2014 "automation system and integrated manufacturing operations management of the key performance indicators

Standard Part 2. Definition and Description ".

Please note that some of this document may be patentable. The issuing agencies of this document do not bear the responsibility of identifying these patents.

This part is proposed by China Machinery Industry Federation.

This part of the National Automation System and Integration Standardization Technical Committee (SAC/TC159) centralized.

This section is drafted unit. Zhejiang University Institute of Intelligent Systems and Control, Zhejiang Control Software Technology Co., Ltd., Beijing Machinery Industry since

Institute of Automation, Ningbo University of Technology, Zhejiang University.

Introduction

GB/T 34044 of this section focuses on manufacturing operations management key performance indicators.

Key Performance Indicators Focus on the organization's key success factors is a quantifiable measure of strategic objectives. No matter from eliminating the waste of lean Manufacturing perspective, or from the perspective of the completion of the strategic business point of view, the key performance indicators are important to analyze and improve manufacturing performance.

The concept of manufacturing operation management is defined in IEC 62264, and the functional hierarchy model of manufacturing enterprise is given, as shown in Fig.1. Figure drawing

The different levels of the functional hierarchy model are described. Business Planning and Logistics Management (Level 4), Manufacturing Operations Management (Level 3), Batch Process Control,

Continued Process control or discrete process control (layers 1 and 2). These levels give the functions and tasks in different time periods.

Figure 1 functional hierarchy model

IEC 62264 also defines the hierarchical model of a physical device, as shown in Figure 2. Businesses, factories and regions belong to common terminology, but according to

Batch manufacturing process, continuous manufacturing process, discrete or repetitive manufacturing process, as well as the characteristics of storage and transportation processes, work centers and work units are different

terms of.

The key performance indicators defined in this section belong to Tier 3, the key performance indicators related to manufacturing operations management. These indicators are

Level 3 is generated and calculated, some of which are related to Level 4. To define these key performance indicators, we need layer 1 and

Layer 2 parameters.

The key performance indicators defined in this section use generic terms used by manufacturing companies to replace specific terms such as work centers and units of work.

Manufacturing operations management, sometimes called manufacturing execution system, mainly includes. production and operation management, maintenance and operation management, quality operation pipe

Management and inventory management. Four types of operating modules by the

corresponding activity model. Each activity model includes eight activities. Detailed planning, transfer

Degree, Executive Management, Resource Management, Definition Management, Tracking, Data Acquisition and Analysis. These activities apply to production runs, quality runs, stocks Run and maintain.

The use of standardized models to represent these key performance indicators is intended.

- a) promote the specification and procurement of integrated systems, in particular for the interoperability of manufacturing execution systems;
- b) provide a way to classify capacity tools and apply them to many areas.

Figure 2 equipment level

GB/T 34044 gives the concept, terminology and method of managing the key performance indicators used in manufacturing and running processes. User included

Factory managers responsible for production performance, software vendors that develop factory-managed key performance indicators, production planning engineers, manufacturing systems

Designers and equipment suppliers.

Key performance indicators also relate to Tier 4, such as key performance indicators related to business planning and logistics management, but these are not standards

Quasi-range. Level 4 key performance indicators are often associated with economic, business, logistics and financial factors. These key performance indicators are used

Assess the status or compliance of your company's key goals or key success factors. Economic Key Performance Indicators for Business Decision Making (Problem Identification

Description, and Information Extraction), Economic Controls (Objective/Actual Comparisons), Financial Documents, Key Factors and Relationship Coordination (Conduct Management)

basis.

Automation systems and integration

Manufacturing operations management of the key performance indicators

Part 2. Definition and description

1 Scope

GB/T 34044 defines the key performance indicators (KPIS) used in Manufacturing Operations Management (MOM).

GB/T 34044 of this part of the detailed description of the practical application of a series of key performance indicators. These indicators pass the formula and phase

Off elements, time behavior, units and ratios and so on. This section also pointed out the use of key performance indicators and the applicable production

the way.

This section, the key performance indicators on equipment and IEC 62264 provisions of the unit of work.

2 Terms and definitions

The following terms and definitions apply to this document.

2.1

Referencetime referencetime

The time model's baseline timeline corresponds to the planned maximum time interval for production and maintenance tasks.

Example. Natural day 24 hours; 1 week.

2.2

Plannedtime plannedtime

The planned duration of a specific period of time.

Example. The expected duration of a plan, run, or resource state.

2.3

The actual time actualtime

The actual duration of a specific period of time.

Example. Actual duration of operation or resource status.

Note. The actual time period may be less than, equal to or greater than the corresponding planned time period.

2.4

Time model timemodel

Reference time division.

3 Abbreviations and symbols

The following abbreviations and symbols apply to this document.