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

GB/T 32197-2025

Replacing GB/T 32197-2015

**Industrial robot controller open communication interface
specification**

工业机器人控制器开放式通信接口规范

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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.

This document replaces GB/T 32197-2015 "Robot Controller Open Communication Interface Specification" and is consistent with GB/T 32197-2015.

In addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) The scope has been changed (see Chapter 1, Chapter 1 of the 2015 edition);
- b) The robot controller communication interface model has been changed (see Chapter 4, Chapter 4 of the 2015 edition);
- c) Deleted complex data structure objects and device attribute objects (see Chapter 5 and Chapter 6 of the 2015 edition);
- d) Added test methods for protocol support functional requirements (see Chapters 5 and 6).

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 on Robotics Standardization (SAC/TC591).

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The previous versions of this document and the documents it replaces are as follows.

- First published in 2015 as GB/T 32197-2015;

- This is the first revision.

1 Scope

This document provides an industrial robot controller communication interface model, specifies the protocol support functional requirements, and describes the corresponding tests method.

This document applies to the TCP/IP-based communication protocol for stationary industrial robot controllers.

2 Normative references

GB/T 25000.10-2016

3.1 Terms and Definitions

The following terms and definitions apply to this document.

3.1.1

An interface for information transmission between connected devices.

Note. The communication interface includes the communication protocol, connection physical characteristics and data format, so that different devices can understand each other and transfer data effectively.

3.1.2 Robot controller robotcontroler

A device connected to the robot body, receiving client instructions and controlling the robot body's movements.

3.1.3 JSON data format

A protocol content type used by the message body.

3.1.4 Raw data format rawdataformat

Unwrapped unprocessed binary data.

3.1.5 controlprivilege

Client interface access permissions that have a substantial system impact on the controller.

3.2 Abbreviations

The following abbreviations apply to this document.