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

GB/T 47246-2026

**Technical specification for the electronic functions of child
restraint systems for power-driven vehicles**

机动车儿童乘员用约束系统电子功能技术规范

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1 Scope

GB/T 47246-2026 is the Chinese national standard covering the electronics in a child seat - the occupancy and buckle sensing, the misuse and incorrect installation warnings, the child presence detection that warns a driver walking away from a car with a child still in it, and the interface to the vehicle. Children left in hot cars die every summer, and this is the standard for the systems meant to stop it. First edition, in force since 1 October 2026. It was issued on 31 March 2026 and takes effect on 1 October 2026, as a first edition. The document is under the responsibility of the Ministry of Industry and Information Technology. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the classification, technical requirements, inspection items, and guidance documents on marking and instructions for child restraint systems for power-driven vehicles (hereinafter referred to as the "child restraint systems"), and describes the corresponding test methods. This document is applicable to the child restraint systems with electronic functions.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through normative references in the text. 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 2423.7 Environmental testing - Part

2. Test methods - Test Ec. Rough handling shocks, primarily for equipment - type specimens

GB/T 2423.56-2023 Environmental testing - Part

3 Terms and Definitions

The terms and definitions defined in GB 27887 and the following ones are applicable to this document.

3.1 Child Restraint System; CRS Child Seat A device designed to reduce injury to the occupant by restricting the movement of the child's body during a vehicle collision or sudden deceleration, while maintaining the child occupant in a seated or reclining position. [Source: GB 27887-2024, 3.1]

3.2 Rigid Fixture for the Child Restraint System ISOFIX An internationally standardized system for connecting a child restraint system to a vehicle using two lower anchor points on the vehicle, two corresponding rigid connectors on the child restraint system, and a device to limit the rotation of the child restraint system. [Source: GB 27887-2024, 3.4]

3.3 Test Dummy A dummy used in testing to simulate a child. NOTE. Q-series or P-series dummies are included.

3.4 Electronic Component A component that primarily relies on the movement of electrons in a vacuum, gas, or semiconductor to conduct electricity. [Source: GB/T 19865-2024, 3.5.5, with modifications]

3.5 Working Voltage The voltage required to maintain the proper functioning of the electronic components of the child restraint system. NOTE. Effects of transient voltages are disregarded.

3.6 Close-to-the-Ear Device A sound-emitting device located on the child restraint system, close to the child's ears. NOTE. A loudspeaker positioned in the headrest of the child restraint system.

3.7 Heating Device The electronic component used for heating in a child restraint system.

3.8 Wired Communication The method of communication between the child restraint system and the terminal via a transmission medium, such as a conductor or cable.

3.9 Wireless Communication The method of communication between the child restraint system and the terminal that does not utilize conductors or cables.

4 Classification

4.1 Classification by Communication Function Child restraint systems are classified into the following types based on whether they possess communication functions.

a) Class I. Child restraint systems with communication functions. The communication functions of Class I child restraint systems may utilize, but are not limited to, the following methods. Wired communication. e.g., via Controller Area Network (CAN) bus, Universal Serial Bus (USB), Ethernet, Local Interconnect Network (LIN) bus, etc.; Wireless communication. e.g., Bluetooth Low Energy (BLE), Wireless Local Area Network (Wi-Fi), 4th or 5th generation mobile communication technology (4G/5G), short-range wireless communication technology (e.g., NearLink), etc.

b) Class II. Child restraint systems with electronic functions but without communication functions.

4.2 Classification by Power Supply Method Child restraint systems are classified into the following types based on their power supply method.

a) Battery-powered. Child restraint systems powered by dry-cell batteries or rechargeable batteries;

b) Externally powered. Child restraint systems that draw power from the vehicle or an external power source via a power interface;

c) Hybrid-powered. Child restraint systems that utilize both of the above power supply methods.

5.1 Environmental Adaptability Requirements

5.1.1 Environmental adaptability in static state Under the following environmental conditions, with the child restraint system in a static (powered-off) state, a temperature cycling test shall be conducted in accordance with the provisions of 6.3.1.1. After returning to the environmental conditions specified in 6.1, an inspection shall be performed in accordance with 6.3.1.2; the electronic functions of the child restraint system shall operate normally.

a) Ambient temperature. -20°C to 85°C ;

b) Relative humidity. 30% to 90%.

5.1.2 Operating environment adaptability Under the following environmental conditions, a temperature cycling test shall be conducted in accordance with 6.3.1.1, followed by an inspection in accordance with 6.3.1.3; a damp-heat cycling test shall be conducted in accordance with the provisions of 6.3.2. During and after the tests, the electronic functions of the child restraint system shall operate normally.

- a) Ambient temperature. -10°C to 60°C;
- b) Relative humidity. 30% to 90%.

5.2 Basic Functional Requirements

5.2.1 Low-battery warning function Battery-powered child restraint systems shall be equipped with a low-battery warning function. A low-battery warning test shall be conducted in accordance with the provisions of 6.4.1. When the voltage falls below the specified limit, the child restraint system shall alert the users to the insufficient power level and prompt them to replace or recharge the battery; the form of the alert is not restricted.

5.2.2 Anti-pinch function Child restraint systems equipped with electric adjustment functions shall feature an anti-pinch function. Testing for this function shall be conducted in accordance with the provisions of 6.4.2; the child restraint system shall stop or reverse movement when encountering resistance (not exceeding 100 N) and shall issue a warning. The form of the warning is to be determined by the manufacturer but must be specified in the instruction manual. This article does not apply to electric adjustment functions that operate in incremental steps solely through user tapping; nor does it apply if the electric adjustment functions of the child restraint system cannot be executed while a child is seated. **NOTE.** Electric adjustment functions include electric seat rotation, electric backrest angle adjustment, electric headrest extension/retraction, etc.

5.2.3 Child restraint status detection function For child restraint systems equipped with functions such as child occupancy detection or detection of buckle locking status for full-body harness-style child restraint straps, the child restraint status detection test shall be conducted in accordance with the provisions of 6.4.3; a notification shall be provided when the status of the corresponding function changes, in any form.

5.2.4 Installation warning function For child restraint systems equipped with installation detection functions, the installation warning test shall be conducted in accordance with the provisions of 6.4.4; a notification shall be provided when the status of the corresponding function changes, in any form. **NOTE.** Installation detection functions include ISOFIX installation detection, support leg installation detection, top tether installation detection, etc.

5.2.5 Acoustic requirements for sound-emitting devices When conducting the sound pressure test in accordance with the provisions of 6.4.5, the A-weighted equivalent sound pressure level (L_{pAeq}) of the sound measured from close-to-the-ear devices shall not exceed 65 dB; the A-weighted equivalent sound pressure level (L_{pAeq}) of the sound measured from sound-emitting devices other than close-to-the-ear devices shall not exceed 85 dB.

5.3 Basic Communication Requirements

5.3.1 Communication functions and data transmission Class I child restraint systems shall