

ICS 43.080.20



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

GB/T 43407.3-2023

**Road vehicles -- Ergonomic requirements for the driver's
compartment in low-floor line-service buses -- Part 3:
Information devices and controls**

道路车辆 低地板专线行驶客车驾驶区人体工程学要求 第3部分：信息装置和控制
器

(English Translation)

Issued on: November 27, 2023

Implemented on: March 1, 2024

Issued by: SAMR; SAC

Table of Contents

Foreword	3
Introduction	6
1 Scope	7
2 Normative References	7
3 Terms and Definitions	7
4 Position Requirements for Information Devices and Controls	11
4.1 Basic Principles of Ergonomics	11
4.2 Compatibility with Positions Specified in GB/T 17867	12
4.3 Zone A	12
4.4 Zone B	12
4.5 Zone B1	13
4.6 Zone C	13
4.7 Zone C1	14
4.8 Zone D	14
4.9 Zone E	14
4.10 Zone F	15
4.11 Inclination Angle	15
5 Adjustable Dashboard	15

1 Scope

This document specifies the position requirements for information devices and controls in the driver's compartment.

This document is applicable to the design of the driver's compartment of Category-M3 low-floor line-service buses with a width greater than 2.30 m. Other buses may take this as a reference.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the 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 4094 Symbols for Controls, Indicators and Tell-tales of Motor Vehicles

GB/T 17867 Location of Hand Controls, Indicators and Tell-tales in Motor Vehicles (GB/T 17867-2023, ISO 4040:2009, MOD)

GB/T 43407.1 Road Vehicles - Ergonomic Requirements for the Driver's Compartment in Low-floor Line-service Buses - Part 1: General Description and Basic Requirements (GB/T 43407.1-2023, ISO 16121-1:2012, MOD)

3 Terms and Definitions

What is defined in GB/T 43407.1-2023, and the following terms and definitions are applicable to this document.

3.3

Zone A The dashboard area located beneath the steering wheel, whose range is bounded by a horizontal tangent to the top of the steering column at its uppermost position, two vertical lines respectively projected from the left and right outer edges of the steering wheel and the top of the dashboard (see Figure 1).

3.1 Early warning

Visual warning signal that does not require immediate action.

3.2 Alert

Visual warning signal that requires immediate action.

3.4 Zone B

The dashboard area located to the left of the steering wheel, its right side is bounded by the vertical line tangent to the left outer edge of the steering wheel, its left side and front side are bounded by the "hand reach range" R value (see Figure 1 and Figure 2), and its rear is bounded by a transverse plane perpendicular to the upper plane of the steering wheel. The maximum distance between this transverse plane and the lower center (when the steering wheel is in the middle position recommended by the manufacturer) of the steering wheel is 60 mm.

3.5 Zone C

The dashboard area located to the right of the steering wheel, which has the same shape as Zone B, but is a mirror image of each other (see Figure 1).

3.6 Zone B1

This is an auxiliary plane area, starting from the end of Zone B closest to the driver, with the same width as Zone B, and continues to extend downward (see Figure 1).

NOTE: Zone B1 can be integrated with Zone B.

3.7 Zone C1

This is an auxiliary plane area that mirrors Zone B1 and is adjacent to Zone C (see Figure 1).

NOTE: Zone C1 can be integrated with Zone C.

3.8 Zone D

The side console area on the driver's left side. The distance between the right side and the outer edge of the widest part of the seat cushion is not less than 60 mm (not less than 100 mm is recommended). It is limited to the front by the rear border of Zone B1 and limited to the left and rear by the cabin walls (see Figure 1).

3.9 Zone E

The side console area on the driver's right side. The distance between the left side and the outer edge of the widest part of the seat cushion is not less than 100 mm. It is limited to the front by the rear border of Zone C1, limited to the right by the left border of the passenger passage specified in relevant standards, and limited to the rear by the cabin walls (see Figure 1). B---Zone B (3.4); B1---Zone B1 (3.6); C---Zone C (3.5); C1---Zone C1 (3.7); D---Zone D (3.8); E---Zone E (3.9); F---Zone F (3.10); H---seat point-H; R---hand reach range, = 750 mm; SP---shoulder point.

4.1 Basic Principles of Ergonomics

The design of information units (equipment) shall follow the following ergonomic principles:

- The driver shall have easy access to the control devices in the normal driving position, and try to avoid bending the body forward;
- The cash register and ticket vending machine shall be easy to operate;
- There shall be no obstruction of sight from the front and sides;
- The driver shall have no visibility obstruction when observing the dashboard, card-swiping machine and coin-feeding machine, etc.;
- Clear representation of information sources in the form of pictographic figure;
- Use indicator lights as little as possible on the premise of complying with relevant national

standards;

---It shall be convenient for the driver to identify faults and require as few corrective operations as possible;

---The symbols shall be large and clear (complying with the relevant stipulations of GB 4094);

---Use graphics for centralized information display (for example, centralized information hazard warning signal device for LHD vehicles (optional installation in Zone C and Zone C1);

---automatic monitoring system, ticket vending device or similar devices for RHD vehicles (optional installation in Zone B1);

---headlight (optional installation in Zone B1, Zone C and Zone C1);

---front fog light (optional installation in Zone B1, Zone C and Zone C1);

---rear fog light (optional installation in Zone B1, Zone C and Zone C1);

---interior lighting of passenger compartment (optional installation in Zone B1, Zone C and Zone C1);

---Optional installation position of video monitors.

For the position of intercoms and video monitors, the restriction of hand reach range can be ignored.

4.5 Zone B1

The control devices of the following equipment can be located in Zone B1:

---optional installation position of headlight (see 4.4);

---optional installation position of front fog light (optional) (see 4.4);

---optional installation position of rear fog light (see 4.4);

---optional installation position of interior lighting of passenger compartment (see 4.4).

4.6 Zone C

The control devices of the following equipment should be located in Zone C:

---door control switch (except door emergency switch, for RHD vehicles, optional installation in Zone E);

---retarder brake controller (if installed);

---vehicle lift system control device (if installed, for RHD vehicles, optional installation in