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Bus service door emergency control

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Foreword

This document is drafted in accordance with the provisions of GB/T 1.1-2020 Directives for Standardization - Part 1: Rules for the Structure and Drafting of Standardization Documents.

Attention is drawn to the fact that certain contents of this document may involve patents. The issuing body of this document shall not be liable for the identification of patents.

This document is proposed and under the jurisdiction of the National Technical Committee of Standardization for Automobiles (SAC/TC 114).

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Bus service door emergency control

1 Scope

This document specifies the technical requirements, vehicle mounting requirements, test methods, inspection rules, packaging and storage for emergency controllers of bus passenger doors. This document shall apply to the design, manufacture and inspection of emergency controllers for bus passenger doors of M_e class and M_1 class buses.

2 Normative References

The contents of the following documents constitute indispensable provisions of this document through normative references in the text. For dated referenced documents, only the version corresponding to the specified date shall apply to this document; for undated referenced documents, the latest versions (including all amendment sheets) shall apply to this document.

GB/T 191 Packaging and Storage Pictorial Markings

GB/T 2423.10 Environmental Testing - Part 2: Test Methods - Test Fc: Vibration (Sinusoidal)

GB/T 3730.1 Motor Vehicles, Trailers and Vehicle Combinations - Terms and Definitions - Part 1: Types

GB/T 4208-2017 Degrees of Protection Provided by Enclosures (IP Code)

GB 13094 Safety Requirements for Bus Structures

GB/T 15089 Classification of Motor Vehicles and Trailers

GB/T 28046.4-2011 Road Vehicles - Environmental Conditions and Testing for Electrical and Electronic Equipment - Part 4: Climatic Loads

GB/T 30512 Requirements for Restricted Substances in Motor Vehicles

GB 30678 Safety Signs and Information Symbols for Buses

GB 38262 Burning Characteristics of Interior Materials for Buses

QC/T 484 Automotive Paint Coatings

QC/T 625 Coatings and Chemical Treatment Layers for Automobiles

QC/T 29106 Technical Specifications for Automotive Wire Harnesses

3 Terms and Definitions

The terms and definitions defined in GB/T 3730.1, GB 13094 and GB/T 15089 as well as the following ones shall apply to this document.

3.1 service door emergency control system

A system that enables manual or automatic opening of bus passenger doors by operating the bus passenger door emergency controller under emergency conditions, regardless of whether the power-operated passenger doors are supplied with power.

Note: The service door emergency control system includes the bus passenger door emergency controller, actuating and connecting components, operation markings and other accessories, but excludes the components that realize the normal opening and closing functions of passenger doors. Classified by working principle, it can be divided into the pneumatically controlled service door emergency control system (see Figure 1) and the mechanically controlled service door emergency control system (see Figure 2).

Figure 1 Schematic Diagram of Pneumatically Controlled Service Door Emergency Control System

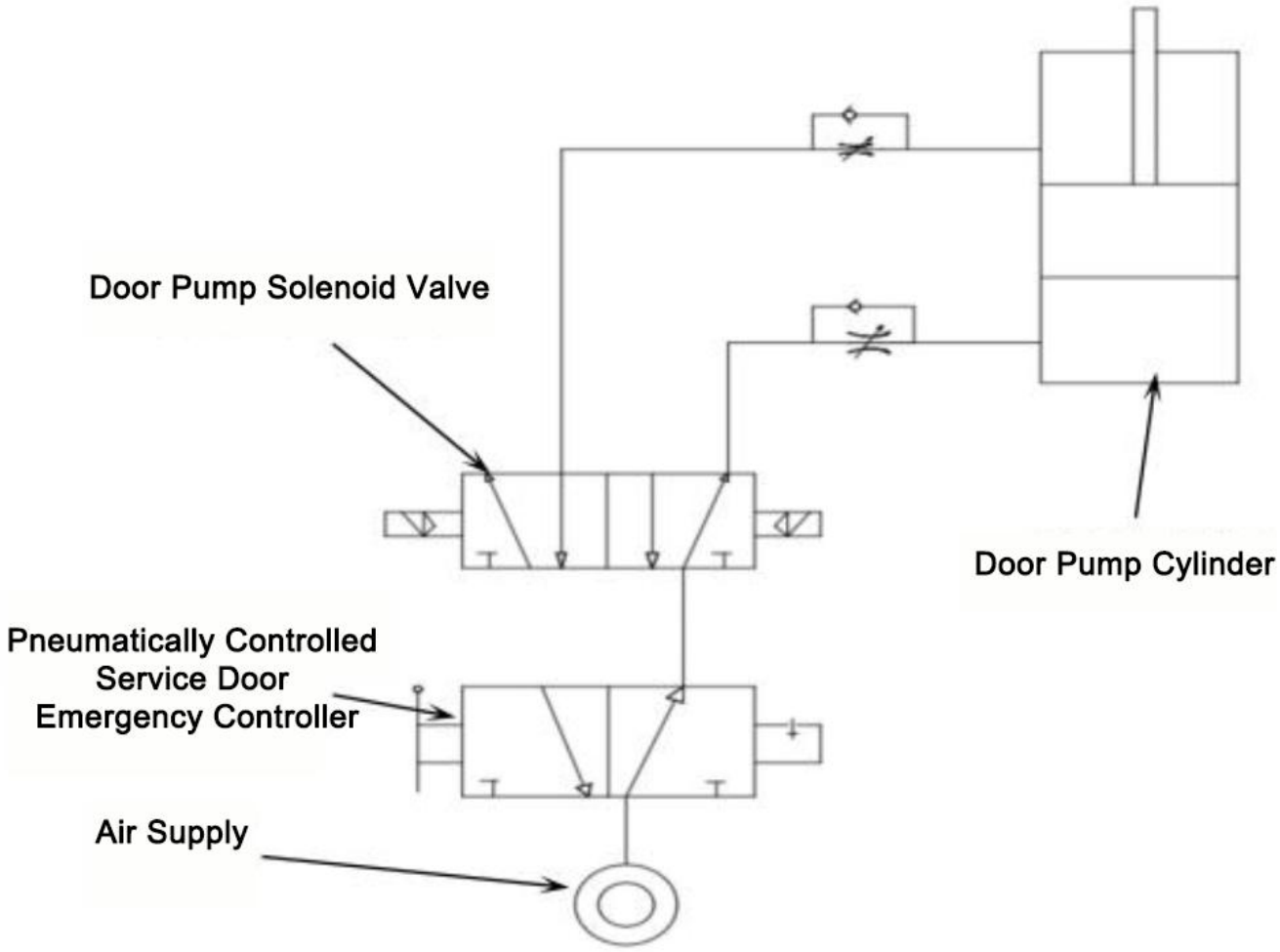
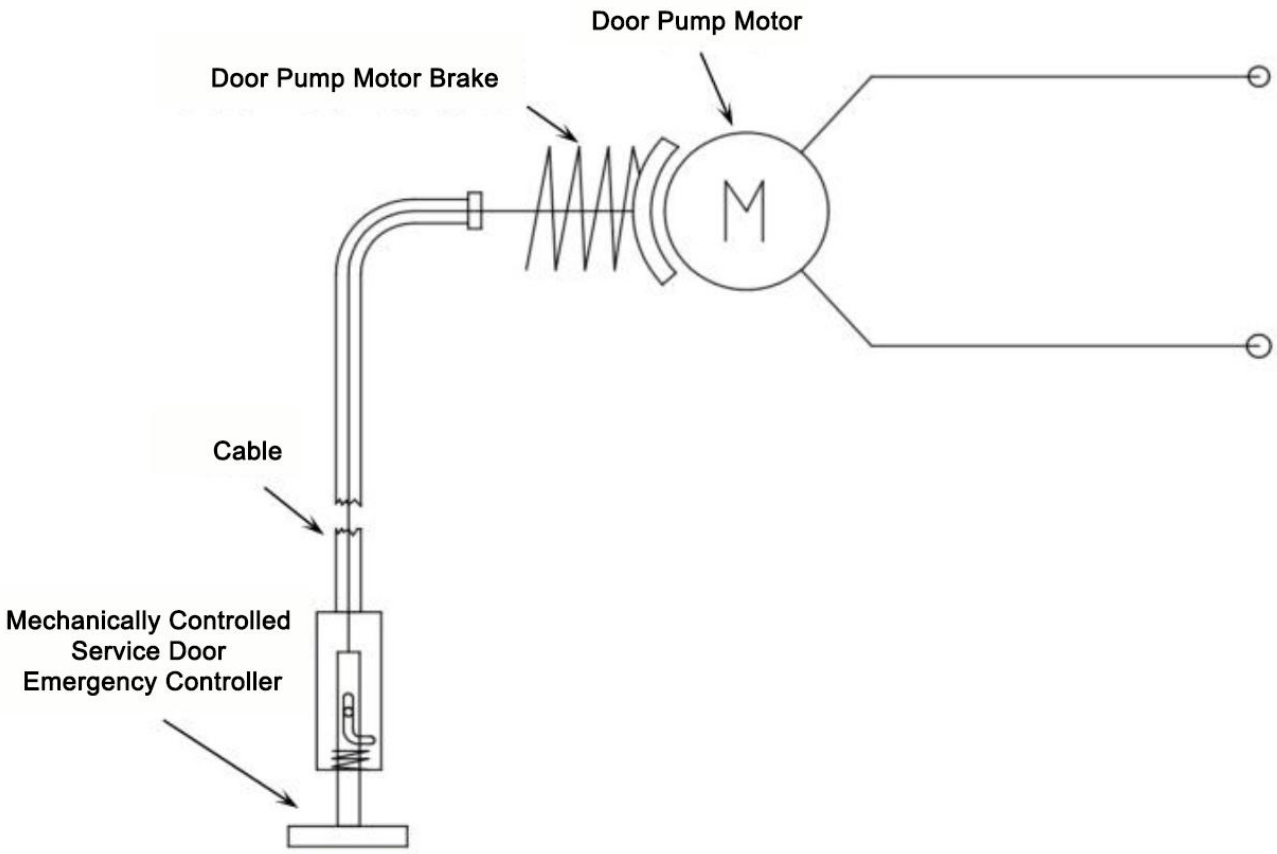


Figure 2 Schematic Diagram of Mechanically Controlled Service Door Emergency Control System



3.2 Service Door Emergency Controller

An actuating device used to operate the service door emergency control system and achieve the emergency door opening function.

Note: Classified by installation position, it is divided into the external service door emergency controller, the internal service door emergency controller and the service door emergency controller in the driver's compartment. Classified by operating mechanism, it is divided into the pull-type service door emergency controller, the push-type service door emergency controller and the rotary-type service door emergency controller.

4 Technical Requirements

4.1 General Requirements

4.1.1 The rated working air pressure of the pneumatically controlled service door emergency control system shall be 0.8 MPa, and the working air pressure range shall be 0.4 MPa ~ 1.2 MPa.

4.1.2 The service door emergency controller shall function normally under the conditions of an ambient temperature of -40 ℃ ~ 80 ℃ and a relative humidity of not more than 95%.

4.1.3 The surface of components of the service door emergency controller shall be smooth and flat, without obvious scratches, dents or other defects that affect the product's appearance and service performance.

4.1.4 Wires of electrical components shall comply with the provisions of QC/T 29106, and their temperature resistance shall be not less than 105 ℃. All wires shall be bundled into harnesses, neatly arranged, firmly clamped and secured with reliable connections; insulating sleeves shall be fitted at all connection points.

4.1.5 The content of restricted and prohibited substances in the service door emergency controller shall comply with the provisions of GB/T 30512.

4.1.6 The service door emergency controller shall be equipped with a misoperation protection device (such as a protective cover) or have a misoperation alarm function, except for the service door emergency controller in the driver's compartment.

4.1.7 The misoperation protection device shall be easily openable and facilitate emergency operation after being opened.

4.1.8 If a protective cover is provided, its opening button shall operate smoothly to open and close and be securely locked; the protective cover shall not spring open automatically during vehicle operation.

4.1.9 An audible or visual alarm signal shall be provided to the driver when the misoperation protection device is opened or the service door emergency controller is operated, except for the service door emergency controller in the driver's compartment.

4.2 Performance Requirements for the Service Door Emergency Control System

4.2.1 Opening Time Requirements for the Service Door Emergency Control System

When tested in accordance with 6.2.1, after operating the service door emergency controller, the passenger door shall be able to open automatically or manually within 8 seconds to a width that allows the passenger door access gauge specified in GB 13094 to pass through.

4.2.2 Inhibition Function Requirements

When the vehicle is in normal operation at a speed exceeding 3 km/h, the internal service door emergency controller shall be in the inhibited state to prevent accidental door opening caused by misoperation or other reasons; when the vehicle is stationary or traveling at a speed of 3 km/h or less, the internal service door emergency controller shall automatically resume its normal function. Electric passenger doors with mechanical door locking structures shall be deemed to have the inhibition function.