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

GB 8108-2014

Replacing GB 8108-1999

Vehicle electronic sirens

车用电子警报器

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1 Scope

GB 8108-2014 is the Chinese national standard on vehicle electronic sirens, in the field of environment and health protection, safety. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 5 December 2014 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force

since 1 July 2015. Classification: ICS 13.320, CCS A91. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the classification, requirements, test methods, installation, inspection rules, markings, certificates, packaging for electronic sirens installed on police cars, fire engines, ambulances, engineering rescue vehicles. This standard applies to electronic sirens installed on police cars, fire engines, ambulances, engineering rescue vehicles.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this standard.

GB/T 2423.1 Environmental testing for electric and electronic and electronic products - Part

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Reference plane When the sound pressure level of the speaker is tested, the plane directly in front of the sounding direction and perpendicular to the ground.

3.2 Reference axis A line perpendicular to the reference plane and through a single speaker's sounding system center or array speaker's geometry center.

3.3 Reference point The intersection of the reference plane and the reference axis.

4 Classification and naming

4.1 Classification Electronic sirens (hereinafter referred to as sirens) may be divided into integral type and split type according to the structure.

4.2 Naming The requirements for the model naming of siren are as follows:

5.1 Requirements for appearance and structure

5.1.1 The surface of the siren shall be free of rust. The coating shall be free of flaking or air bubbles. The surface shall be free from obvious mechanical damage such as scratches, cracks, breakage. The fastening parts are not loose.

5.2 Electrical components

5.2.1 Power supply The power supply shall meet the following requirements.

5.2.2 Conductor The flame-retardancy of the conductor used in the siren shall comply with the requirements of GB/T 19666. The positive conductor of the power line shall be marked in red and the negative conductor shall be marked in black. Customized by enterprise

5.2.3 Wiring The inner conductor of the siren shall be protected, to ensure that the conductor does not come into contact with parts that may cause insulation damage to the conductor. When the conductor is to pass through the metal hole, the metal hole shall be chamfered and shall not have sharp edges; meanwhile it shall add jacket to the metal hole.

5.3 Requirements for basic functions

5.3.1 The control buttons, knobs, other mechanisms of sirens shall be operated normally. The corresponding tone and function shall be normal.

5.3.2 The contents of the microphone shall be clearly identifiable, without noise or whistling.

5.4 Performance requirements

5.8 Constant-temperature-and-humidity performance The siren shall work normally and have no electrical faults in a constant- temperature-and-humidity environment.

5.9 Rainproof performance (only for speakers and outdoor open-air sirens) The siren shall be able to withstand the rain test. It shall work normally and without electrical faults during and after the test.

5.11 Vibration-resistance The siren shall be able to withstand the vibration test. During and after the test, it shall be able to work normally and without electrical failure. There shall be no permanent structural deformation.

5.12 Impact-resistance The siren shall be able to withstand the impact test. During and after the test, it shall be able to work normally and without electrical failure. There shall be no permanent structural deformation.

6.1 Test conditions

6.1.1 General test environment If not stated in the relevant provisions, each test shall be carried out under the following atmospheric conditions.

6.1.2 Acoustic test environment The acoustic environment for the test shall comply with the requirements of GB/T 3767.

6.1.3 Test voltage If not stated in the relevant provisions, each test shall be carried out at the following test voltage.

6.2 Inspection of appearance and structure Visually inspect the surface and structure of the siren, to check whether the text symbols and signs are standardized.

6.3 Inspection of electrical components

6.3.1 Inspection of power supply The inspection of power is performed as follows:

6.3.3 Inspection of wiring Visually inspect the siren's wiring, wiring protection, etc.

6.4 Inspection of basic function Operate each control button and knob of the siren to check whether they work normally. Turn on the siren to check each tone state and the speaking quality of microphone.

6.5 Test of performance requirements

6.5.1 Test of output power Connect the siren's controller, the microphone and the equivalent load which replaces speaker in the normal working mode.

6.5.3 Test of pure tone inspection of speaker Feed the speaker with a sinusoidal voltage equivalent to 1/2 of the rated power. At three frequency points of 500 Hz, 1000 Hz, 1500 Hz, detect the sound emitted by the speaker. The detection distance is 2 m.

6.5.4 Test of sound pressure level

6.5.4.1 Test device The sound level meter used for the test shall meet the requirements of GB/T 3785.1. Its accuracy is grade-I.

6.5.6 Test of harmonic distortion Install the microphone on the test frame according to the normal use state. The sound input hole of the microphone shall be on the axis of the simulation port and 40 mm away from the simulated lip-ring. Turn on the siren's power. Adjust the volume adjustment knob to the maximum position. The microphone's excitation sound pressure level is 94 dB. The measurement frequency is 1000 Hz. Measure and record the total harmonic distortion of the siren's controller and microphone at 1000 Hz.

6.6 Test of electrical performance

6.6.1 Test of power adaptability For sirens which have a nominal voltage of DC12 V, respectively supply power at DC

6.7 High-temperature test

6.7.1 Test device The test device shall comply with the requirements of GB/T 2423.2.

6.7.2 Test method Connect the siren's controller, microphone, speaker into a complete system. Place it in the high-temperature test chamber. Follow the steps below.