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

GB/T 25338.2-2019

Replacing GB/T 25338.2-2010

Switch machines for railways - Part 2: Test methods

铁路道岔转辙机 第2部分：试验方法

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Foreword

GB/T 25338 "Railway Switch Point Machine" is divided into 2 parts.

1.General technical conditions;

2.Test method. This part is Part 2 of GB/T 25338. This section was drafted in accordance with the rules given in GB/T 1.1-2009. This part replaces GB/T 25338.2-2010 "Railway Turnout Switch Machine Part

2.Test Method", and it is the same as GB/T 25338.2- Compared with.2010, the main technical changes except for editorial changes are as follows:

--- Increase the vibration resistance test requirements for the superposition of 2 or more resonance peaks (see 5.14,

5.13 in the.2010 edition);

---Modified the vibration test requirements (see 5.14,

5.13 of the 2010 edition);

---Modified the friction coupling performance test method (see 6.4, 2010 edition 6.4);

--- The inspection of the shift contactor has been deleted (see

6.10 in the 2010 edition). This part is proposed and managed by the National Railway Administration. Drafting organizations of this section. Xi'an Lutong No. Equipment Research Co., Ltd., Xi'an Railway Signal Co., Ltd., Tianjin Railway Signal Co., Ltd. The main drafters of this section. Zhang Hui, Hao Lina, Wang Tao, Mei Jigang, Zhang Zhen. The previous versions of the standards replaced by this part are as follows:

---GB/T 25338.2-2010. Railway turnout switch machine Part

1 Scope

China's national test methods for railway point machines. It is Part 2 of GB/T 25338 and specifies the methods for testing the machines that move, lock and detect railway switches. Part 1 states what a point machine must do; this part states how each of those things is demonstrated, and the demonstrations are unusually consequential because the property being verified is a safety function. The central test is of the detection: the machine must be shown to report locked only when the switch rail is genuinely home, and the test therefore introduces a defined obstruction between the switch rail and the stock rail and verifies that the machine does not detect. That obstruction is a few millimetres, because that is the size of object which will derail a wheel, and passing the test means the machine refuses to give detection with the obstruction present - which is the opposite of how most functional tests are framed. Around it sit the tests of the things that make the machine work at all: the throwing force and the current drawn against load, the operating time, the behaviour when the switch is obstructed so that the drive stalls, the trailing test where the machine is forced by a vehicle running through the switch, and the endurance test over the very large number of operations a point machine performs in service. Then the environmental tests, which for a device bolted to sleepers in the open matter more than for most equipment: temperature, water and dust ingress, vibration from passing trains, and operation with snow and ice in the mechanism. The standard fixes the apparatus, the conditions and the acceptance criteria for each. Issued on 30 August 2019 and in force since 1 March 2020, it replaces GB/T 25338.2-2010.

This part of GB/T 25338 specifies the terms of electric point machine, electro-hydraulic point machine and electric-air point machine (hereinafter referred to as "point machine"), Test conditions and general test methods. This section applies to the test of electric point machines, electro-hydraulic point machines and electric-air point machines.

2 Normative references

The following documents are indispensable for the application of this document. For dated

reference documents, only the dated version applies to this document. For undated references, the latest version (including all amendments) applies to this document.

GB/T 2408-2008 Determination of the flammability of plastics horizontal method and vertical method (

IEC 60695-11-10.1999, IDT)

GB/T 2423.1-2008 Environmental testing of electric and electronic products Part

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Electrical characteristics The operating current and operation of the switch machine under the single-wire resistance conditions specified by the rated switching force, rated voltage or power supply voltage (AC) string Time; the action time of the electric-air point machine under the conditions of rated conversion force, rated wind pressure and control voltage.

3.2 Control voltage The voltage across the solenoid valve coil of the electric switch machine.

3.3 Rated wind pressure The electric empty switch machine realizes the calibrated design wind pressure value during normal operation.

3.4 Single wire resistance A single wire resistance on the transmission path of the power supply to the motor end of the switch machine.

4 Test conditions

4.1 Standard atmospheric conditions for the test The tests specified in this section (except for special regulations) are all carried out under standard test atmospheric conditions.

- a) Temperature. 15°C~35°C;
- b) Relative humidity. 45%~75%;
- c) Air pressure. 86kPa~106kPa.

4.2 Test standard atmospheric conditions for arbitration measurement The standard atmospheric conditions for the arbitration measurement test are as follows:

- a) Temperature. 20°C±2°C;
- b) Relative humidity. 60%~70%;
- c) Air pressure. 86kPa~106kPa.

5 General test methods

5.1 Test power supply Power supply for test switch machine. AC regulated power supply for AC switcher, AC regulated bridge full-wave rectifier power supply for DC switcher (not (With filter), AC voltage stabilized bridge type full-wave rectifier power supply for the electromagnetic directional valve control power supply of the electric empty switch machine.

5.2 Instruments for testing switch machines The test instruments of the switch machine include.

---Electromagnetic instrument. accuracy is

0.5 level;

---Electric stopwatch. accuracy is 0.006s;

---Pressure gauge. accuracy is 1.5;

--- Dynamometer. accuracy is 1%;

---Megger. voltage level 500V, 250V;

--- Tension and compression dynamometer. accuracy 1%;

---Digital DC low resistance meter. accuracy is

0.2 level;

--- The flashover breakdown device of the insulation withstand voltage test is an AC 50Hz sine wave, and the leakage current capacity should not be less than 0.5A.

5.3 Visual inspection Perform visual inspection or manual visual inspection according to product standards or technical conditions.

5.4 Insulation resistance and insulation withstand voltage test

5.4.1 Insulation resistance Insulation resistance test uses a 500V megohmmeter to test between conductive parts and between conductive parts and the chassis (ground), normal insulation The resistance and the insulation resistance after damp heat should meet the requirements of the product standard.

5.4.2 Insulation withstand voltage

5.4.2.1 Test voltage. DC switch machine adopts AC 50Hz, 2000V; AC switch machine adopts AC 50Hz, 2400V; electric idling The track machine adopts AC 50Hz and 1000V.

5.4.2.2 Test voltage application location. between conductive parts and between conductive parts and the chassis (ground).

5.4.2.3 The voltage application time is 1min. If the test voltage is increased by 25%, the test