



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

GB/T 25123.2-2018

**Electric traction -- Rotating electrical machines for rail and road
vehicles -- Part 2: Electronic convertor-fed alternating current
motors**

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Foreword

GB/T 25123 Electro Traction - Rotating Electrical Machines for Rail and Road Vehicles

consists of the following parts:

- Part 1: Machines others than Electronic Convertor-Fed Alternating Current Motors
- Part 2: Electronic Convertor-Fed Alternating Current Motors;
- Part 3: Determination of the Total Losses of Convertor-Fed Alternating Current Motors by Summation of the Component Losses;
- Part 4: Permanent Magnet Synchronous Electrical Machines Connected to an Electronic Converter.

This Part is Part 2 of GB/T 25123.

This Part was drafted as per the rules stipulated in GB/T 1.1-2009.

This Part replaced GB/T 25123.2-2010 Electric Traction - Rotating Electrical Machines for

Rail and Road Vehicles - Part 2: Electronic Converter-Fed Alternating Current Motors.

Compared with GB/T 25123.2-2010, the major technical changes of this Part are as follows:

- Add the content of "Further tests can be selected in accordance with GB/T 25117.1 and GB/T 25117.3. In order to avoid the test repeating, some type inspection items and research test items are best carried out on the combined test bench." (See 1.1 of this Edition);
- Modify the regulations on altitude and ambient temperature. In Clause 4, the altitude and ambient temperature, etc., are changed from the original direct regulations to as per GB/T 32347.1-2015 (see Clause 4 of this Edition; Clause 4 of the 2010 Edition);
- Modify the name of the insulation class into "insulation system thermal grading"; and each class is marked with numbers, such as 130(B), 155(F), 180(H) (see 8.1.5, 8.1.6 of this Edition; 8.1.4, 8.1.6 of the 2010 Edition);
- Modify the content of traction motor vibration limit. Since in GB/T 10068-2008, the limit value of vibration velocity has been changed, this edition has been modified accordingly. And add the subclause of "do not assess the axial vibration velocity of the motor without fixed bearing structure" (see 8.4 of this Edition; 8.4 of the 2010 Edition);
- Modify the optional methods and standards for noise measurement (see D.1 of this Edition; C.1 of the 2010 Edition).

This Part uses redrafting method to modify and adopt IEC 60349-2:2010 Electric Traction - Rotating Electrical Machines for Rail and Road Vehicles - Part 2: Electronic Converter-Fed Alternating Current Motors.

Compared with IEC 60349-2:2010, this Part made certain adjustment in structure; and the specific adjustments are as follows:

- Modify the serial number of the subclauses in Clause 1; and add the title of the subclause;
- Add 8.5 "noise measurement";
- Modify the serial number of subclauses in 9.3.1, adding 9.3.1.1~9.3.1.3;
- Modify the serial number of subclauses in 9.3.2, adding 9.3.2.1~9.3.2.3;
- Modify the serial number of subclauses in C.3, adding C.3.1 and C.3.2;

- Modify the serial number of subclauses in D.1, adding D.1.1~D.1.6;
- Modify the serial numbers of subclauses in Annex E, adjusting E.1, E.2, and E.3 into Table E.1;
- Modify the serial number of Annex, adjusting Annex A into Annex C, Annex C into Annex D, Annex D into Annex A.

There are technical differences between this Part and IEC 60349-2:2010. The terms involved

in these differences have been marked by a vertical single line (|) in the outer margin position.

The specific technical differences and their reasons are as follows:

--- Regarding the Normative References, this Part has made adjustments with technical differences to adapt to the technical conditions of China. The adjustments are reflected in Clause 2 "Normative References". The specific adjustments are as follows:

- ? Use GB/T 755 that equivalently adopts the international standard to replace IEC 60334-1 (see 1.4, Clause 4);
- ? Use GB/T 1971 that equivalently adopts the international standard to replace IEC 60334-8 (see 6.2, Table E.1);
- ? Use GB/T 2900.25 that equivalently adopts the international standard to replace IEC 60050-411 (see Clause 3);
- ? Use GB/T 2900.36 that modifies and adopts the international standard to replace IEC 60050 (811) (see Clause 3);
- ? Use GB/T 2900.74 that modifies and adopts the international standard to replace IEC 60050-131 (see Clause 3);
- ? Use GB/T 2900.83 that equivalently adopts the international standard to replace IEC 60050-151 (see Clause 3);
- ? Use GB/T 11021 that equivalently adopts the international standard to replace IEC

60085 (See 8.1.5);

- ? Use GB/T 32347.1-2015 that modifies and adopts the international standard to replace IEC 62498-1:2010 (see Clause 4);

? Add the quotation of GB/T 1402, GB/T 25117.1, GB/T 25117.3 (see 1.1, Annex A);

? Delete IEC 60034-9, IEC 60034-17, IEC 61672, which are transferred to the Bibliography.

--- Modify the environmental conditions, the altitude and temperature are quoted from GB/T 32347.1-2015 Railway Applications - Environmental Conditions for Equipment - Part 1:

Equipment on Board Rolling Stock (see Clause 4);

--- Add the specific parameter information provided by the designer of the asynchronous traction motor (see 5.1);

--- Change the NOTE in 6.1 into the text (see 6.1);

--- Add the static pressure head requirements at rated air volume (see 8.1.2);

--- Add test items and modify the contents of Table 1. These test items include: noise measurement (see 8.5), measurement of winding cold-state DC resistance (see 9.7), inspection of wiring marks and rotation direction (see 9.8);

--- The footnotes in Table 2 to adapt to the actual situation in China (see 8.1.5);

--- Modify Annex E to be informative (see Annex E).

This Part made the following editorial modifications:

--- Modify the title of Clause 7 (see Clause 7);

--- Modify the format and content of Table 1; and list the noise test in Table 1 as a type inspection item separately (see 7.2, 8.5);

--- Modify the name of "electrical machine" into "electric motor" (see 8.2.1, Annex D);

--- Modify the title of 9.5, that is, change "dielectric test" into "winding-to-earth withstand voltage test" (see 9.5);

--- Delete the NOTE (see 9.5);

--- Modify the name of the vibration test (see 9.6);

--- Add "Note: Annex E gives the content of negotiation between the supplier and the purchaser " to quote Annex E (see Clause 9);

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and Road Vehicles - Part 2: Electronic Convertor-Fed