

Australian/New Zealand Standard™

**Household and similar electrical  
appliances—Safety**

**Part 2.201: Particular requirements for  
battery powered self-balancing personal  
transport devices**



## **AS/NZS 60335.2.201:2016**

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-002, Safety of Household and Similar Electrical Appliances and Small Power Transformers. It was approved on behalf of the Council of Standards Australia on 22 November 2016 and by the New Zealand Standards Approval Board on 17 November 2016.

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The following are represented on Committee EL-002:

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National Retailers Association (Australia)  
Business New Zealand  
Consumer Electronic Suppliers Association, Australia  
Consumers' Federation of Australia  
Electrical Regulatory Authorities, Australia  
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# Australian/New Zealand Standard™

## Household and similar electrical appliances—Safety

### Part 2.201: Particular requirements for battery powered self-balancing personal transport devices

Originated in Australia and New Zealand as AS/NZS 60335.2.201:2016.

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## HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

### Part 2.201: Particular requirements for battery powered self-balancing personal transport devices

#### FOREWORD

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-002- Safety of Household and Similar Electrical Appliances and Small Power Transformers.

The objective of this Standard is to provide manufacturers, designers, regulatory authorities, testing laboratories and similar organizations with safety requirements designed to give the user protection against hazards that might occur during normal operation and abnormal operation of the appliance and which may be used as the basis for approval for sale or for connection to the electricity supply mains in Australia and New Zealand

It is to be used in conjunction with the latest edition of AS/NZS 60335.1, *Household and similar electrical appliances – Safety - Part 1: General requirements* including its Amendments. It was established on the basis of AS/NZS 60335.1:2011.

This part 2 supplements or modifies the corresponding clauses of AS/NZS 60335.1 (referred to as part 1 in this part 2) so as to convert it into the Australian/New Zealand Standard: Safety of battery powered self-balancing personal transport devices.

When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. When this standard states "addition", "modification" or "replacement", the relevant text of Part 1 is to be adapted accordingly.

NOTE 1 The relevant text of Part 1 includes the requirements and tests detailed in Annex B of Part 1.

NOTE 2 The following print types are used:

- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in small roman type.

Words in **bold** in the text are defined in Clause 3.

The essential safety requirements in AS/NZS 3820<sup>1</sup> that could be applicable to requirements for battery powered self-balancing personal transport devices are covered by this standard.

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<sup>1</sup> AS/NZS 3820 *Essential safety requirements for electrical equipment*

## INTRODUCTION

It has been assumed in the drafting of this Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

This standard recognizes an accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions. It also covers abnormal situations that can be expected in practice and takes into account the way in which electromagnetic phenomena can affect the safe operation of appliances.

This standard is a product family standard dealing with the safety of appliances and takes precedence over horizontal and generic standards covering the same subject.

NOTE Horizontal and generic standards covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the AS/NZS 60335 series of standards. For example, in the case of temperature requirements for surfaces on many appliances, generic standards, such as ISO 13732-1 for hot surfaces, are not applicable in addition to Part 1 or part 2 standards.

## HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

### Part 2.201: Particular requirements for battery powered self-balancing personal transport devices

#### 1 Scope

This clause of Part 1 is replaced by the following.

This Standard deals with the safety of **battery powered self-balancing personal transport devices** incorporating batteries containing alkaline or other non-acid electrolytes.

#### 2 Normative references

This clause of Part 1 is applicable except as follows.

*Addition:*

IEC 62133, *Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications*

#### 3 Terms and Definitions

This clause of Part 1 is applicable except as follows.

##### 3.1.9 *Replacement:*

##### **normal operation**

the appliance with a fully charged battery is operated in such a way to simulate the riding position and is operated on a continuous belt or rollers. The appliance is loaded with a load of 100 kg or the maximum load specified in the instructions, whichever is higher. The motors are loaded to 66% of their locked rotor current

##### 3.101

##### **cycle**

time required for the fully charged batteries to be discharged while under the conditions of **normal operation** until the appliance no longer operates plus the time required for batteries to be fully recharged from the fully discharged condition with appliance connected to its designated **detachable power supply part**

##### 3.102

##### **battery powered self-balancing personal transport device**

appliance comprising a power supply and a functional part. The functional part has one or more wheels fitted with a gyroscope controlled by the user and powered by internal batteries with a d.c. motor to drive each wheel.

Note 1 to entry: **Battery powered self-balancing personal transport devices** are also known as hover boards

#### 4 General requirement

This clause of Part 1 is applicable.

#### 5 General conditions for the tests

This clause of Part 1 is applicable except as follows.

##### 5.3 *Addition:*

*The test of 21.102 is carried out before the test of Clause 11.*