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PROFESSIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

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## Motors and Controllers for Electric Motorcycles and Electric Mopeds

### 电动摩托车和电动轻便摩托车 驱动用电机及其控制器

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# Motors and Controllers for Electric Motorcycles and Electric Mopeds

## 1 SCOPE

This document specifies the product model designation, requirements, test methods and inspection rules with respect to the motors (including the motors with a reducer) and controllers for electric motorcycles and electric mopeds.

This document is applicable to the motors (hereinafter referred to as “motors”) and controllers for electric motorcycles and electric mopeds.

## 2 NORMATIVE REFERENCES

The following normative documents contain provisions which, through normative reference in this text, constitute essential provision of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendment) applies.

GB/T 755	Rotating electrical machines—Rating and performance
GB/T 1184-1996	Geometrical tolerancing--Geometrical tolerance for features without individual tolerance indications
GB/T 2423.5-2019	Environmental testing for electric and electronic products - Part 2: Test methods - Test Ea and guidance: Shock (IEC 60068-2-27: 2008, IDT)
GB/T 2423.17-2008	Environmental testing for electric and electronic products - Part 2: Test method - Test Ka: Salt mist (IEC 60068-2-11: 1981, IDT)
GB/T 4208-2017	Degrees of protection provided by enclosure (IP code)
GB/T 4942-2021	Degrees of protection provided by the integral design of rotating electrical machines (IP code) — Classification
GB/T 5171.21-2016	Small power motors—Part 21: General test methods
GB/T 10069.1-2006	Measurement of airborne noise emitted by rotating electrical machines and the noise limits Part 1: Method for the measurement of airborne noise emitted by rotating electrical machines (ISO 1680: 1999, MOD)
GB/T 10069.3-2008	Measurement of Airborne Noise Emitted by Rotating Electrical Machines and the Noise Limits — Part 3: Noise Limits
GB/T 13202-2015	Series of motorcycle rims (ISO 4249-3: 2010, ISO 5995-2: 1988, ISO 6054-2: 1990, MOD)
GB/T 18387	Limits and test method of magnetic and electric field strength from electric vehicles
GB/T 18488.1-2015	Drive motor system for electric vehicles - Part 1: Specification
GB/T 18488.2-2015	Drive motor system for electric vehicles - Part 2: Test methods
GB 34660	Road vehicles — Requirements and test methods of electromagnetic compatibility
ISO 11898.1	Road vehicle - Controller Area Network (CAN) - Part 1: Data link layer and physical signaling
ISO 11898.2	Road vehicle - Controller Area Network (CAN) - Part 2: High-speed medium access unit
ISO 14229.2	Road vehicles - Unified Diagnostic Services (UDS) - Part 2: Session layer services
ISO 15765.2	Road vehicles – Diagnostics on Controller Area Networks (CAN) - Part 2: Network layer services
ISO 16845.1	Road vehicles - Controller Area Network (CAN) Conformance Test Plan Part 1: Data link layer and physical signaling

## 3 TERMS AND DEFINITIONS

For the purposes of this document, the following terms and definitions apply.

- 3.1 wheel with the outer shell of motor integrated (abbreviated as “integrated wheel”)  
An integrated motorcycle drive wheel consisting of the wheel hub and the outer shell of motor
- 3.2 continuous torque  
The maximum torque available for a continuous operating period of 30 min as specified
- 3.3 continuous power  
The maximum power available for a continuous operating period of 30 min as specified
- 3.4 rated speed  
The motor speed at which the continuous power is output as specified
- 3.5 peak torque  
The maximum torque available for short-time operation
- 3.6 peak power  
The maximum power available for short-time operation



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