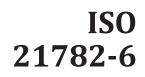
### **INTERNATIONAL STANDARD**



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# Electrically propelled road vehicles — Test specification for electric propulsion components —

Part 6:

**Operating load testing of motor and** inverter



Reference number ISO 21782-6:2019(E)



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#### Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO /IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO /IEC Directives, Part 2 (see <a href="https://www.iso.org/directives">www.iso.org/directives</a>).

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This document was prepared by Technical Committee ISO /TC 22, *Road Vehicles*, Subcommittee SC 37, *Electrically propelled vehicles*.

A list of all parts in the ISO 21782 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at <u>www.iso.org/members.html</u>.

## Electrically propelled road vehicles — Test specification for electric propulsion components —

#### Part 6: **Operating load testing of motor and inverter**

#### 1 Scope

This document specifies operating load tests and test criteria for motor and inverter designed as a voltage class B electric propulsion system for electrically propelled road vehicles.

#### 2 Normative references

The following documents are referred to in the text such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 21782-1:2019, Electrically propelled road vehicles — Test specification for components for electric propulsion — Part 1: General test conditions and definitions

#### 3 Terms and definitions

For the purposes of this document, the terms, definitions and abbreviated terms given in ISO 21782-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <u>https://www.iso.org/obp</u>
- IEC Electropedia: available at http://www.electropedia.org/

#### 4 Tests and requirements

#### 4.1 Operation endurance tests of motor

#### 4.1.1 High acceleration/deceleration endurance test

#### 4.1.1.1 General

The purpose of this test is to evaluate and rank the strength for the components – bearing, end ring, motor shaft key, rotor fixture, rotor, and position sensor – which are affected by mechanical fatigue by repeating the intermittent maximum speed of motor. The test is set considering repeated operations at the upper specification limits of the motor. Unless otherwise, the test method can be decided by the supplier and customer.

#### 4.1.1.2 Test diagram

The test diagram is shown in <u>Figure 1</u>. The test motor is operated by opposing dynamometer on the motor test bench.