

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Electrical insulation systems – Procedures for thermal evaluation –  
Part 31: Applications with a designed life of 5 000 h or less**

**Systèmes d'isolation électrique – Procédures d'évaluation thermique –  
Partie 31: Applications avec une durée de vie de conception maximale de 5 000 h**



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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

ICS 29.080.30

ISBN 978-2-8322-5287-1

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTRICAL INSULATION SYSTEMS – PROCEDURES  
FOR THERMAL EVALUATION –**
**Part 31: Applications with a designed life of 5 000 h or less**

## FOREWORD

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International Standard IEC 61857-31 has been prepared by IEC technical committee 112: Evaluation and qualification of electrical insulating materials and systems.

This bilingual version (2018-01) corresponds to the monolingual English version, published in 2017-01.

The text of this International Standard is based on the following documents:

CDV	Report on voting
112/356/CDV	112/375/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

The French version of this standard has not been voted upon.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61857 series, published under the general title *Electrical insulation systems – Procedures for thermal evaluation*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
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## INTRODUCTION

IEC 61857-1 provides the general structure to be followed for an electrical insulation system (EIS) evaluation and classification.

IEC TR 61857-2 provides guidelines to identify the application and to select the preferred test method based on the application.

This part of IEC 61857 provides a test method for EIS applications, such as the automotive industry, when the designed life is 5 000 h or less.

The selection of this test method can be decided by the end product application.

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# ELECTRICAL INSULATION SYSTEMS – PROCEDURES FOR THERMAL EVALUATION –

## Part 31: Applications with a designed life of 5 000 h or less

### 1 Scope

This part of IEC 61857 establishes an EIS evaluation for applications with a designed life of 5 000 h or less. This test method follows the procedures of IEC 60505 and is modified based on the range of designed life.

### 2 Normative references

The following documents are referred to in the text in such a way that none 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.

IEC 60505, *Evaluation and qualification of electrical insulation systems*

IEC 61857-1, *Electrical insulation systems – Procedures for thermal evaluation – Part 1: General requirements – Low-voltage*

IEC TR 61857-2, *Electrical insulation systems – Procedures for thermal evaluation – Part 2: Selection of the appropriate test method for evaluation and classification of electrical insulation systems*

IEC 61857-21, *Electrical insulation systems – Procedures for thermal evaluation – Part 21: Specific requirements for general purpose models – Wire-wound applications*

IEC 61857-22, *Electrical insulation systems – Procedures for thermal evaluation – Part 22: Specific requirements for the encapsulated-coil model – Wire-wound electrical insulation system (EIS)*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61857-1 and the following apply.

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

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

#### 3.1

##### **designed life**

expected application time which is proposed or decided by an end user, an industrial manufacturer, etc., regardless of the duty cycle, continual or intermittent