SEK TS 60364-8-1

Utgiven	Utgåva	Sida	Ansvarig kommitté
2019-09-18	2	1 (1+71)	SEK TK 64

Elinstallationer för lågspänning – Funktion – Del 8-1: Energieffektivitet

Low-voltage electrical installations – Part 8-1: Functional aspects – Energy efficiency (IEC 60364-8-1:2019)

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Syftet med IEC 60364-8-1:2019, som återges i denna publikation, är att ge vägledning för att öka energieffektiviteten i nya eller ändrade elinstallationer för lågspänning. Den behandlar inte elsäkerhet och ingår därför inte i Elinstallationsreglerna SS 436 40 00, utan ges ut separat. Eftersom området utvecklas snabbt, ges den ut som teknisk specifikation, SEK TS, och inte som svensk standard.

Corrigendum No.1, 2019-05 till IEC 60364-8-1:2019 är inarbetat i standarden.

Tidigare fastställd svensk standard SEK TS 60364-8-1, utgåva 1, 2017, gäller ej fr o m 2019-09-18.

ICS 13.020.01; 27.015; 91.140.50

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 8-1: Functional aspects – Energy efficiency

FOREWORD

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International Standard IEC 60364-8-1 has been prepared by IEC technical committee 64: Electrical installations and protection against electric shock.

This second edition cancels and replaces the first edition published in 2014. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) revision of Annex B;
b) revision of 4.2: Energy efficiency assessment for electrical installations;
c) update of 8.3: Input from loads, sensors and forecasts;
d) introduction of new definitions.

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

FDIS	Report on voting
64/2353/FDIS	64/2360/RVD

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.

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

It has the status of a group energy efficiency publication in accordance with IEC Guide 118 and IEC Guide 119.

The reader's attention is drawn to the fact that Annex C lists all of the "in-some-country" clauses on differing practices of a less permanent nature relating to the subject of this document.

A list of all parts in the IEC 60364 series, published under the general title *Low-voltage electrical installations*, 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,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

The contents of the corrigendum of May 2019 have been included in this copy.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

The optimization of electrical energy usage can be facilitated by appropriate design and installation considerations. An electrical installation can provide the required level of service and safety for the lowest electrical consumption. This is considered by designers as a general requirement of their design procedures in order to establish the best use of electrical energy. In addition to the many parameters taken into account in the design of electrical installations, more importance is nowadays focused on reducing losses within the system and its use. The design of the whole installation has therefore to take into account inputs from users, suppliers and utilities.

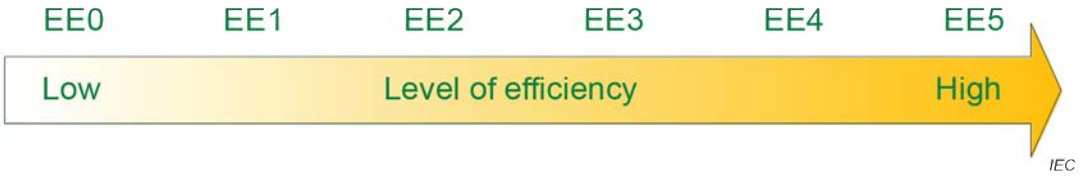
It is important that this document covers existing electrical installations in buildings, in addition to new installations. It is in the refurbishment of existing buildings that significant overall improvements in energy efficiency can be achieved.

The optimization of the use of electricity is based on energy efficiency management which is based on the price of electricity, electrical consumption and real-time adaptation. Efficiency is checked by measurement during the whole life of the electrical installation. This helps identify opportunities for any improvements and corrections. Improvements and corrections may be implemented by redesign or equipment replacement. The aim is to provide a design for an efficient electrical installation which allows an energy management process to suit the user's needs, and in accordance with an acceptable investment. This document first introduces the different measures to ensure an energy efficient installation based on kWh saving. It then provides guidance on giving priority to the measures depending on the return of investment; i.e. the saving of electrical energy and reducing of electrical power costs divided by the amount of investment.

This document is intended to provide requirements and recommendations for the electrical part of the energy management system addressed by ISO 50001.

It introduces requirements, recommendations and methods for the design and the energy efficiency assessment of an electrical installation within the framework of an energy efficiency management approach in order to get the best permanent functionally equivalent service for the lowest electrical energy consumption and the most acceptable energy availability and economic balance.

The assessment method described in Annex B based on the electrical energy efficiency of the installation allows a classification of energy efficiency installation according to the following levels:



NOTE Account can be taken, if appropriate, of induced works (civil works, compartmentalization) and the necessity to expect, or not, the modifiability of the installation.

This document introduces requirements and recommendations to design the adequate installation in order to give the ability to improve the management of the energy performance of the installation by the tenant/user or for example the energy manager.

All requirements and recommendations of this part of IEC 60364 enhance the requirements contained in Parts 1 to 7 of the IEC 60364 series.

LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

Part 8-1: Functional aspects – Energy efficiency

1 Scope

This part of IEC 60364 provides additional requirements, measures and recommendations for the design, erection, operation and verification of all types of low voltage electrical installation including local production and storage of energy for optimizing the overall efficient use of electricity.

It introduces requirements, recommendations and methods for the design and the energy efficiency (EE) assessment of an electrical installation within the framework of an energy efficiency management approach in order to get the best permanent functionally equivalent service for the lowest electrical energy consumption and the most acceptable energy availability and economic balance.

These requirements, recommendations and methods apply, within the scope of IEC 60364 (all parts), for new installations and modification of existing installations.

This document is applicable to the electrical installation of a building or system and does not apply to products. The energy efficiency of products and their operational requirements are covered by the relevant product standards.

Where another standard provides specific requirements for a particular system or installation application (e.g. manufacturing system covered by ISO 20140 (all parts)), those requirements may supersede this document.

This document does not specifically address building automation systems.

This group energy efficiency publication is primarily intended to be used as an energy efficiency standard for the low voltage electrical installations mentioned in Clause 1, but is also intended to be used by technical committees in the preparation of standards, in accordance with the principles laid down in IEC Guide 119 and IEC Guide 118.

2 Normative references

The following documents are referred to in the text in 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.

IEC 61557-12, *Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC – Equipment for testing, measuring or monitoring of protective measures – Part 12: Power metering and monitoring devices (PMD)*

IEC 61869-2, *Instrument transformers – Part 2: Additional requirements for current transformers*

IEC 62053-21, *Electricity metering equipment (a.c.) – Particular requirements – Part 21: Static meters for active energy (classes 1 and 2)*

IEC 62053-22, *Electricity metering equipment (a.c.) – Particular requirements – Part 22: Static meters for active energy (classes 0,2 S and 0,5 S)*

IEC Guide 118, *Inclusion of energy efficiency aspects in electrotechnical publications*

IEC Guide 119, *Preparation of energy efficiency publications and the use of basic energy efficiency publications and group energy efficiency publications*