PD IEC TR 63213:2019

BSI Standards Publication

Power measurement applications within electrical distribution networks and electrical installations

bsi.

National foreword

This Published Document is the UK implementation of IEC TR 63213:2019.

The UK participation in its preparation was entrusted to Technical Committee PEL/85, Measuring equipment for electrical and electromagnetic quantities.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Published by BSI Standards Limited 2019

ISBN 978 0 539 02141 7

ICS 17.220.20

Compliance with a British Standard cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 30 September 2019.

Amendments/corrigenda issued since publication

Date	Text affected

IEC TR 63213

Edition 1.0 2019-09

TECHNICAL REPORT

Power measurement applications within electrical distribution networks and electrical installations

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 17.220.20

ISBN 978-2-8322-7292-3

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

POWER MEASUREMENT APPLICATIONS WITHIN ELECTRICAL DISTRIBUTION NETWORKS AND ELECTRICAL INSTALLATIONS

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a Technical Report when it has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

IEC TR 63213, which is a Technical Report, has been prepared by IEC technical committee 85: Measuring equipment for electrical and electromagnetic quantities.

The text of this Technical Report is based on the following documents:

Draft TR	Report on voting
85/662/DTR	85/690/RVDTR

Full information on the voting for the approval of this Technical Report 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.

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.

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

Utility engineers and facility managers are requesting rich power and energy data from many locations, with guaranteed and reliable accuracy. This data is essential for helping to understand and ensure the reliability, efficiency, and cost effectiveness of their power distribution systems and the energy generated or consumed.

A good understanding of the different kinds of measurement applications is critical to choosing the proper type and capabilities of measuring devices for each location that will deliver the required information.

To achieve these goals, a complete energy measurement plan supported by a network of metering devices.

This report offers an overview of the different categories of measurement applications, with detailed descriptions and illustrations of each, including references to the most relevant international standards.

POWER MEASUREMENT APPLICATIONS WITHIN ELECTRICAL DISTRIBUTION NETWORKS AND ELECTRICAL INSTALLATIONS

1 Scope

This Technical Report intends to provide state-of-the-art information on the various electricity measurement applications made in the grid (supply side) or in electrical installation (demand side), and on the related standards covering these applications.

This Technical Report does not address measurements made for specific purposes such as protection, control, automation or indication.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and notations

For the purposes of this document, the following terms and definitions 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 Measurement definitions

3.1.1
power quality instrument
PQI
instrument whose main function is to measure, record and possibly monitor power quality parameters in power supply systems, and whose measuring methods (class A or class S) are defined in IEC 61000-4-30

[SOURCE: IEC 62586-1:2017, 3.1.1]

3.1.2
power quality assessment function
power quality functions whose measurement methods are defined in IEC 61000-4-30

[SOURCE: IEC 61557-12:2018, 3.1.2]

3.1.3
energy meter
instrument intended to measure electrical energy by integrating power with respect to time

[SOURCE: IEC 60050-313:2001, 313-01-35]