



BSI Standards Publication

## Power measurement applications within electrical distribution networks and electrical installations

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## National foreword

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# TECHNICAL REPORT



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**Power measurement applications within electrical distribution networks and electrical installations**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## POWER MEASUREMENT APPLICATIONS WITHIN ELECTRICAL DISTRIBUTION NETWORKS AND ELECTRICAL INSTALLATIONS

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IEC TR 63213, which is a Technical Report, has been prepared by IEC technical committee SC55: 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- withdrawn,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
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## 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.

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# 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 62580-1:2017, 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]