

Electricity metering — Local and remote data exchange — Applications and performance

ICS 35.240.99; 91.140.50

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National foreword

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- monitor related international and European developments and promulgate them in the UK.

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Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the CEI IEC title page, pages ii to iv, pages 1 to 21 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Amendments issued since publication

Amd. No.	Date	Comments

This Published Document, having been prepared under the direction of the Electrotechnical Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 May 1999

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ISBN 0 580 32413 3

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**RAPPORT
TECHNIQUE – TYPE 3
TECHNICAL
REPORT – TYPE 3**

**CEI
IEC
1361**

Première édition
First edition
1995-11

**Lecture des compteurs électriques –
Echange de données local et à distance –
Applications et performance**

**Electricity metering –
Local and remote data exchange –
Applications and performance**



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия



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Foreword

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

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3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.

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The main task of IEC technical committees is to prepare International Standards. In exceptional circumstances, a technical committee may propose the publication of a technical report of one of the following types:

- type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;
- type 3, when a technical committee has collected data of a different kind from that which is normally published as an International Standard, for example “state of the art”.

Technical reports of types 1 and 2 are subject to review within three years of publication to decide whether they can be transformed into International Standards. Technical reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

IEC 1361, which is a technical report of type 3, has been prepared by IEC technical committee 13: Equipment for electrical energy measurement and load control.

The text of this standard is based on the following documents:

Committee draft	Report on voting
13/1071/CDV	13/1098/RVC

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

This report gives examples of performance requirements for the exchange of data between utilities and their customers using two-way communications.

1 Scope

This technical report gives examples of performance requirements for local and remote exchange of data between utilities and their customers using two-way communications. The performance requirements provide guidance for utilities to specify a system to meet their needs.

In line with the scope of TC13/WG14, this report is worded for electricity, however the principles may apply to heat, water and gas metering.

2 Interpretation of tables

Examples of the performance requirements for various aspects of the exchange of information are given in Table 1 to Table 8.

An explanation of the column headings of Table 1 to Table 8 is given in Annex A.

Each item of information exchange has been categorized in a particular table according to the constraints that may best determine its performance requirements.

Similar items however appear in different categories, for example:

- a) certain meter readings are listed in Table 1 as routine readings, whereas customer initiated readings are listed in Table 2;
- b) load switching on customer request is listed in Table 2, whereas utility initiated switching is listed in Table 4.

3 Performance requirements

3.1 Meter reading (see Table 1)

3.1.1 Routine meter reading

3.1.1.1 General

Routine meter reading covers cyclical reading for billing purposes of all registers utilized within the tariff, including reset and set where appropriate. Remote reading facilities allow amendment to existing practices. For instance, frequency of existing billing (probably quarterly to monthly for domestic and monthly for commercial/industrial) could be changed, subject to restrictions on databases and utility cost/benefits. Also maximum demand reading/resetting can be scheduled over the month, if meters have the ability to transfer consumption into historical registers at a pre-programmed date and hold the data until it is read.

Billing may be performed by using data from:

- a) current registers (for example: where cumulative readings are taken and interpreted by the billing system), or

- b) from historical registers (where an amount equivalent to a periodic value or a cumulative value is stored).

A register which can contain data that is measured or derived is a specific addressable memory location.

Examples are:

- 1) active energy (kWh)
- 2) demand (MW)
- 3) reset counter.

3.1.1.2 Reading of current registers

Readings can be taken at a frequency greater than the billing period (for example: monthly, quarterly) to enable consumption to be recorded, databases upgraded and reports to be generated for investigating irregular or inconsistent consumption patterns. Although it is expected that the majority of readings would occur in the early hours of the morning, transactions could take place at any time, depending on the communications system and priorities.

3.1.1.3 Reading of billing register

This covers the reading of the billing information that was updated on the billing date. The billing date would be the date nominated for the historical registers to be updated from the current registers. Updating would normally be on a monthly basis, with reading before the next update.

The readings would normally be taken in the early hours of the morning when there is little other traffic on the communications network and the information could then be transferred into the billing system to allow updating and checking to occur immediately.

3.1.1.4 Resetting of registers

This is the information provided to the tariff device at the customer premises equipment to enable the historical registers to be updated at the nominated time. The resetting could, under some system architectures, be performed by receipt of a message to the nominated group of customers and resetting would be carried out immediately upon receipt of the resetting command.

3.1.2 Special periodic readings

3.1.2.1 Read registers

This refers to several spot readings being taken over a period to obtain a limited time/consumption pattern. This may be short term (for example: 24 h demand pattern for load research) or longer term (for example: consumption over week/month for fraud check) or to obtain demand values for distribution network management purposes and tariff development.