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INTERNATIONAL ELECTROTECHNICAL COMMISSION

INSTRUMENT TRANSFORMERS – THE USE OF INSTRUMENT TRANSFORMERS FOR POWER QUALITY MEASUREMENT

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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 61869-103, which is a technical report, has been prepared by IEC technical committee 38: Instrument transformers.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
38/402/DTR	38/409/RVC

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

A list of all the parts in the IEC 61869 series, published under the general title *Instrument transformers*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability dateindicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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

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INSTRUMENT TRANSFORMERS – THE USE OF INSTRUMENT TRANSFORMERS FOR POWER QUALITY MEASUREMENT

1 Scope

This part of IEC 61869 is applicable to inductive and electronic instrument transformers with analogue or digital output for use with electrical measuring instruments for measurement and interpretation of results for power quality parameters in 50/60 Hz a.c. power supply systems.

This part of IEC 61869 aims at giving guidance in the usage of HV instrument transformers for measuring power quality parameters.

The power quality parameters considered in this document are power frequency, magnitude of the supply voltage and current, flicker, supply voltage dips and swells, voltage interruptions, transient voltages, supply voltage unbalance, voltage and current harmonics and interharmonics, mains signalling on the supply voltage and rapid voltage changes.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60044-8:2002, *Instrument transformers – Part 8: Instrument transformers: Electronic current transformers*

IEC 61000-2-1:1990, *Electromagnetic compatibility (EMC) – Part 2-1: Environment – Description of the environment – Electromagnetic environment for low-frequency conducted disturbances and signalling in public power supply systems*

IEC 61000-2-2:2002, *Electromagnetic compatibility (EMC) – Part 2-2: Environment – Compatibility for low frequency conducted disturbances and signalling in public low-voltage power supply systems*

IEC 61000-4-7:2002, *Electromagnetic compatibility (EMC) – Part 4-7: Testing and measurement techniques – General guide on harmonics and interharmonics measurements and instrumentation, for power supply systems and equipment connected thereto*

IEC 61000-4-15:2010, *Electromagnetic compatibility (EMC) – Part 4-15: Testing and measuring techniques – Flickermeter – Functional and design specifications*

IEC 61000-4-30:2008, *Electromagnetic compatibility (EMC) – Part 4-30: Testing and measurement techniques – Power quality measurement methods*

IEC 60359:2001, *Electrical and electronic measurement equipment – Expression of performance*

IEC 61557-12:2007, *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. – Equipment for testing, measuring or monitoring of protective measures – Part 12: Performance measuring and monitoring devices (PMD)*

EN 50160:2007, *Voltage characteristics of electricity supplied by public distribution networks*