SLOVENSKI STANDARD
oSIST prEN IEC 60688:2023

01-december-2023

Električni merilni pretvorniki za pretvarjanje izmeničnih električnih veličin v analogne ali digitalne signale

Electrical measuring transducers for converting AC and DC electrical quantities to analogue or digital signals

Ta slovenski standard je istoveten z: **prEN IEC 60688:2023**

ICS:

17.220.20	Merjenje električnih in magnetnih veličin	Measurement of electrical and magnetic quantities

oSIST prEN IEC 60688:2023 **en,fr,de**

85/892/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: **IEC 60688 ED5**	
DATE OF CIRCULATION: **2023-09-29**	CLOSING DATE FOR VOTING: **2023-12-22**
SUPERSEDES DOCUMENTS: **85/888/RR**	

IEC TC 85 : MEASURING EQUIPMENT FOR ELECTRICAL AND ELECTROMAGNETIC QUANTITIES

SECRETARIAT: China	SECRETARY: Ms Guiju HAN
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 13, SC 23K, TC 38, TC 66	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.

FUNCTIONS CONCERNED:

☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY

☒ SUBMITTED FOR CENELEC PARALLEL VOTING	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

Attention IEC-CENELEC parallel voting

The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.

The CENELEC members are invited to vote through the CENELEC online voting system.

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Recipients of this document are invited to submit, with their comments, notification of any relevant “In Some Countries” clauses to be included should this proposal proceed. Recipients are reminded that the CDV stage is the final stage for submitting ISC clauses. (See AC/22/2007 or NEW GUIDANCE DOC).

TITLE:

Electrical measuring transducers for converting AC and DC electrical quantities to analogue or digital signals

PROPOSED STABILITY DATE: 2028

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTRICAL MEASURING TRANSDUCERS FOR CONVERTING AC AND DC ELECTRICAL QUANTITIES TO ANALOGUE OR DIGITAL SIGNALS

FOREWORD

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IEC 60688 has been prepared by IEC technical committee 85: Measuring equipment for electrical and electromagnetic quantities. It is an International Standard.

This fifth edition cancels and replaces the fourth edition published in 2021. This edition constitutes a technical revision.

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

a) updating normative references;
b) updating definitions;
c) updating structure;
d) adding DC power measurement.

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

Draft	Report on voting
85/XXX/FDIS	85/XXX/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

In this document, the following print types are used:

– requirements and definitions: in roman type;

– NOTES: in smaller roman type;

– *compliance: in italic type*.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under 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.

IMPORTANT – The "colour inside" logo on the cover page of this document 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

Energy distribution systems need to guarantee energy efficiency, availability, and network performance to address the following challenges:

- meet sustainable development requirements, where energy measurement is necessary to identify sources of energy savings, and to improve the energy performance of manufacturing, commercial organisations, and public services,
- adjust to technological evolutions (electronic loads, electronic measuring methods…);
- address end-user needs (cost saving, compliance building regulations…) regarding electrical energy management,
- ensure safety and continuity of service,
- adjust to the evolution of installation standards,
- meet the needs of new applications for DC systems (photovoltaic, electrical vehicle, DC distribution, …).

Monitoring electrical quantities in internal networks contributes to address these challenges.

To set up this monitoring, transducers:

- perform the measurement of different types of electrical quantities,
- convert AC and DC electrical quantities to analogue or digital signals,
- can be combined with measuring equipment to monitor and analyse electrical quantities.

NOTE Some of the terms used in this document are different from those used in IEC 60051 (all parts) due to the fundamental differences between indicating instruments and measuring transducers.

ELECTRICAL MEASURING TRANSDUCERS FOR CONVERTING AC AND DC ELECTRICAL QUANTITIES TO ANALOGUE OR DIGITAL SIGNALS

1 Scope

This document applies to transducers (TRD) with electrical inputs and outputs for making measurements of AC or DC electrical quantities. The output signal can be in the form of an analogue or digital signal.

This document applies to measuring transducers used for converting electrical quantities such as:

– current,
– voltage,
– active power,
– reactive power,
– power factor,
– phase angle,
– frequency,
– harmonics or total harmonic distortion, and
– apparent power
– DC power

to an output signal.

NOTE The above electrical quantities include AC and/or DC components.

This document applies

a) if the fundamental frequency of the input(s) lies between 0 Hz and 1 500 Hz,
b) to the electrical measuring transducer if it is part of a system for the measurement of an electrical or non-electrical quantity,
c) to transducers for use in a variety of applications such as telemetry and process control and in one of a number of defined environments.

This document is not applicable for:

– instrument transformers that comply with IEC 61869 (all parts),
– transmitters for use in industrial process application that complies with IEC 60770 (all parts), and
– power metering and monitoring devices (PMD) that comply with IEC 61557-12
– meters that comply with IEC 62053 series
– handheld sensors
– residual current monitoring devices (RCMs) that comply with IEC 62020-1
– residual current detecting devices (RDC-DD) that comply with IEC 62955
– in-cable control and protection devices (IC-CPDs) that comply with IEC 62752
– modular residual current devices (MRCDs) that comply with IEC 60947-2, Annex M.