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Control technology – Rules for the designation of measuring instruments

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**CONTROL TECHNOLOGY –
RULES FOR THE DESIGNATION OF MEASURING INSTRUMENTS**

FOREWORD

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International Standard IEC 62419 has been prepared by IEC technical committee 65: Industrial-process measurement, control and automation.

This standard cancels and replaces IEC/PAS 62419 published in 2005. This first edition constitutes a technical revision.

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

FDIS	Report on voting
65/429/FDIS	65/430/RVD

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

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated 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- withdrawn,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.

INTRODUCTION

The state of science concerning quantities and units has undergone significant changes in the last century. During the period from 1920 to 1960 there was a fundamental change in the comprehension and usage of physical quantities, which was particularly promoted by the works of Julius Wallot published between 1922 and 1953. In this process the various systems of physical units and the usage of numerical equations were replaced by the SI-units (see ISO 1000) and the usage of quantity equations. So the quantities were no longer linked to certain units.

This development culminated in the publishing of the first edition of the German standard DIN 1313 *Notation of physical equations in sciences and technology* in 1931 and the resolutions of the tenth general conference of weights and measures in 1954. Since then it has been considered incorrect to address a quantity by its unit.

In view of this, measuring instruments should not be addressed by the unit of the measured quantity but only by the measured quantity or the measuring task itself.

Referring to the question of market relevance, it must be stated, that especially with respect to the international project of standardized classification and documentation in multilingual equipment descriptions, it is important to critically address the situation regarding the designation of measuring instruments. Ideally, every manufacturer should use the same terminology. In practice, there is confusion in the proper designation of measuring instruments within catalogues and sales brochures which also has consequences in technical literature.

It is not the intention of this standard to enforce particular usages in any language but to make recommendations that remove the linguistic confusion in this field – or at least, reduce it. Considering the urgent necessity of unambiguous technical communication over language boundaries, this is a legitimate goal. This could also be considered to be a matter of global importance.

CONTROL TECHNOLOGY – RULES FOR THE DESIGNATION OF MEASURING INSTRUMENTS

1 Scope and object

This International Standard is applicable to measurement technology. It defines rules for the unambiguous designation of different types of measuring instruments and of measuring instrument features with the intention of enabling unambiguous technical communication over language boundaries.

The scope of this International Standard is

- the adaptation of the designation of measuring instruments and of measuring instrument features to the state of science by designating them according to the measuring quantity or the measuring task instead of the unit, and
- the adaptation of the designation of measuring instruments and of measuring instrument features to the terms given in the ISO/IEC Guide 99 (VIM).

It is strongly recommended that “..... measuring instrument” is used as secondary component in compound terms. This is consistent with the objective of standardization, namely uniformity, especially since the meaning of other secondary components, e.g. “indicator”, “gauge”, “meter”, is no more descriptive than that of the standard component in this context. For exceptions see 4.1 and A.2.

The ambiguous secondary component “... sensor” shall not be used. In its place one of the secondary components “... sensing element”, “... detector”, “... transformer”, “... transducer”, “... transmitter”, “... measuring instrument” or “... measuring chain” shall be used, depending on the task of the functional unit being termed. The definitions for detector (detecting device), transformer, transducer and transmitter are given in IEC 60050-351.

2 Normative references

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

IEC 60050-311, *International Electrotechnical Vocabulary – Part 311: General terms relating to measurements*

IEC 60050-312, *International Electrotechnical Vocabulary – Part 312: General terms relating to electrical measurements*

IEC 60050-351: 2006, *International Electrotechnical Vocabulary – Part 351: Control Technology*

ISO/IEC Guide 99: 2007, *International vocabulary of metrology – Basic and general concepts and associated terms (VIM)*

ISO 31 series, *Quantities and units*

ISO 1000, *SI units and recommendations for the use of their multiples and of certain other units*