

Vahelduvvooluarvestid täpsusklassiga 0,5, 1 või 2

Class 0,5, 1 and 2 alternating-current watthour meters

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 60521:2001 sisaldab Euroopa standardi EN 60521:1995 + Corr.:1997 ingliskeelset teksti.

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Descriptors: Watthour meters, induction type meters, alternating-current meters, class 0,5, class 1, class 2

English version

Class 0,5, 1 and 2 alternating-current watthour meters

(IEC 521 : 1988)

Compteurs d'énergie active à courant
alternatif des classes 0,5, 1 et 2
(CEI 521 : 1988)

Wechselstrom-Wirkverbrauchzähler der
Klassen 0,5, 1 und 2
(IEC 521 : 1988)

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B-1050 Brussels

Foreword

The text of the International Standard IEC 521 : 1988, prepared by IEC TC 13, Equipment for electrical energy measurement and load control, was submitted to the formal vote and was approved by CENELEC as EN 60521 on 1994-07-05 without any modification.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1995-07-15
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1995-07-15

For products which have complied with HD 309.1 S1 : 1979 before 1995-07-15, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2000-07-15.

Annexes designated 'normative' are part of the body of the standard. Annexes designated 'informative' are given for information only. In this standard, annexes ZA and ZB are normative and annex A is informative. Annexes ZA and ZB have been added by CENELEC.

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CONTENTS

	Page
Explanatory foreword in relation to Class 0.5 meters	4
Clause	
1. Scope	4
2. Units	5
3. Definitions	5
4. Classification	11
5. Mechanical requirements	11
6. Electrical requirements	16
7. Marking of meters	24
8. Accuracy	26
9. Starting and running with no-load	34
10. Adjustment	35
APPENDIX A - Graphical symbols for watthour meters	37
Annex ZA (normative) Other international publications quoted in this standard with the references of the relevant European publications.....	39
Annex ZB (normative) Special national conditions.....	40
TABLES	
I. Clearances and creepage distances	13
II. Standard basic currents	16
III. Standard reference voltages	16
IV. Power loss	17
V. Apparent power loss	17
VI. Heating	18
VII. A.C. voltage tests	22
VIII. Voltage marking	24
IX. Voltage and current balance	26
X. Reference conditions	27
XI. Percentage error limits (single-phase meters and polyphase meters with balanced loads)	28
XII. Percentage error limits (polyphase meters carrying a single-phase load, but with balanced polyphase voltages applied to voltage circuits)	29
XIII. Interpretation of test results	30
XIV. Temperature coefficient	30
XV. Influence quantities	31
XVI. Variations due to short-time overcurrents	33
XVII. Variations due to self-heating	34
XVIII. Starting currents	35
XIX. Minimum range of adjustment	36

CLASS 0.5, 1 AND 2 ALTERNATING-CURRENT
WATTHOUR METERS

EXPLANATORY FOREWORD IN RELATION TO CLASS 0.5 METERS

1. Class 0.5 alternating-current watthour meters are employed chiefly for the measurement of very large amounts of energy, but where the load range is small.
2. This class of meter constitutes a particular category which is not entirely in line with the series Class 1 and Class 2.
3. The effect of influence factors (frequency, voltage, etc.) is generally less than for Class 1 and Class 2, but not necessarily in strict proportion to the class indices.
4. The testing of this class of meter requires the use of reference standards of high accuracy, low distortion supply sources and highly qualified and experienced personnel for its operation.

Owing to the large quantities of energy to be measured with Class 0.5 alternating-current watthour meters, it is necessary for them to be verified more frequently than Class 1 and Class 2 meters.

5. The installation of these meters should be carried out with great care, eliminating or reducing to a minimum external influence factors such as magnetic fields, non-verticality and the range of ambient temperature.

1. Scope

This standard applies only to newly manufactured induction type watthour meters of accuracy Classes 0.5, 1 and 2, for the measurement of alternating current electrical active energy of a frequency in the range 45 Hz to 65 Hz and it applies to their type tests only*.

It applies to the assembly of meters and accessories, including current transformers, when enclosed in the meter case. It does not apply to maximum demand indicators (see IEC Publication 211).

It does not apply to any kind of measuring device such as those used for telemetering electrical energy.

* The subject of acceptance testing of Class 2 watthour meters is dealt with in IEC Publication 514.

It does not apply to meters for testing purposes or to special types of watthour meters (e.g. excess meters), except for multi-rate meters.

It does not apply to watthour meters where the voltage across the connection terminals exceeds 600 V (line-to-line voltage for meters for polyphase systems).

Notes 1.- For portable meters and meters for outdoor use, additional requirements may be necessary.

2.- For var-hour meters, see IEC Publication 145.

2. Units

The units employed in this standard are those used by the International Electrotechnical Commission.

3. Definitions

The majority of the following definitions have been taken from those given in Chapters 301, 302 and 303 of the International Electrotechnical Vocabulary (IEV) [IEC Publication 50 (301, 302, 303)]. In such cases, the appropriate IEV reference is given. Certain new definitions or amplifications of IEV definitions have been added in this standard in order to facilitate understanding.

3.1 *Watt-hour meter*

An instrument intended to measure active energy by integrating active power with respect to time (IEV 301-04-17 modified).

3.2 *Induction meter*

A meter in which currents in fixed coils react with the currents induced in the conducting moving element, generally (a) disk(s), which causes their movement.

3.3 *Multi-rate meter*

An energy meter provided with a number of registers, each becoming operative at specified time intervals corresponding to different tariffs. (IEV 302-04-06).

3.4 *Meter rotor*

The moving element of the meter upon which the magnetic fluxes of fixed windings and of braking elements act and which operates the register.

3.5 *Meter driving element*

A working part of the meter which produces a torque by the action of its magnetic fluxes upon the currents induced in the moving element. It generally comprises electromagnets with their control devices.