



National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 61116:1995

ICS 27.100

**ELECTROMECHANICAL EQUIPMENT GUIDE
FOR SMALL HYDROELECTRIC
INSTALLATIONS (IEC 1116:1992)**

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

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Descriptors: Hydraulic machine, hydraulic turbomachine, turbine, power station, setting up, conditions for operation, specification of equipment, delivery, maintenance

ENGLISH VERSION

Electromechanical equipment guide for
small hydroelectric installations
(IEC 1116:1992)

Guide pour l'équipement
électromécanique des petits
aménagements hydro-électriques
(CEI 1116:1992)

Anleitung für die
elektromechanische Ausrüstung
von kleinen Wasserkraftanlagen
(IEC 1116:1992)

This European Standard was approved by CENELEC on 1994-03-08. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

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Ref. No. EN 61116:1994 E

Foreword

The CENELEC questionnaire procedure, performed for finding out whether or not the International Standard IEC 1116:1992 could be accepted without textual changes, has shown that no common modifications were necessary for the acceptance as European Standard.

The reference document was submitted to the CENELEC members for formal vote and was approved by CENELEC as EN 61116 on 1994-03-08.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1995-03-15
- latest date of withdrawal of conflicting national standards (dow) 1995-03-15

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given only for information.

In this standard, annex ZA is normative and annex A is informative.

Endorsement notice

The text of the International Standard IEC 1116:1992 was approved by CENELEC as a European Standard without any modification.

The following editorial corrections apply to the English text of IEC 1116:1992:

<u>(Sub)clause</u>	<u>Correction</u>
2.3.1 b) iii)	Replace "GD ² " by "MR ² ".
3.3.3	Replace the first paragraph by: The unit should be protected by at least one closure device, which in an emergency would close due to lack of electrical signal or activation by electrical signal. This device may be the guide vanes or the admission of air in a siphon-type turbine.
3.3.4	Add at the end of the first paragraph: ... when the operating conditions are modified.
3.3.9.4 A) f)	Replace "level of accuracy" by "accuracy class".
3.3.9.4 B) d)	Replace "level of accuracy" by "accuracy class".
Section 4	In the title, replace "DELIVERY" by "ACCEPTANCE"
4.3.2.1.2 B)	In the title, replace "water" by "wear".

Annex ZA (normative)**Other international publications quoted in this standard
with the references of the relevant European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

NOTE: When the international publication has been modified by CENELEC common modifications, indicated by (mod), the relevant EN/HD applies.

IEC <u>Publication</u>	<u>Date</u>	<u>Title</u>	<u>EN/HD</u>	<u>Date</u>
34-1 (mod)	1983	Rotating electrical machines Part 1: Rating and performance	HD 53.1 S2	1985
34-2	1972	Part 2: Methods for determining losses and efficiency of rotating electrical machinery from tests (excluding machines for traction vehicles)	HD 53.2 S1	1982
34-2A	1974	First supplement: Measurements of losses by the calorimetric method		
34-5	1991 ¹⁾	Part 5: Classification of degrees of protection provided by enclosures of rotating electrical machines (IP Code)	-	-
41	1991	Field acceptance tests to determine the hydraulic performance of hydraulic turbines, storage pumps and pump-turbines	EN 60041	1994
50(602)	1983	International Electrical Vocabulary (IEV) Chapter 602: Generation, transmission and distribution of electricity - Generation	-	-
56 (mod)	1987	High-voltage alternating-current circuit-breakers	HD 348 S4	1991
70	1967	Power capacitors	-	-
76-1 (mod)	1976	Power transformers - Part 1: General	HD 398.1 S1	1980

1) IEC 34-5:1981, mod, is harmonized as EN 60034-5:1986

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