SLOVENSKI STANDARD
SIST EN 60439-1:1995/A2:1998

01-junij-1998

Low-voltage switchgear and controlgear assemblies - Part 1: Type-tested and partially type-tested assemblies - Amendment A2 (IEC 60439-1:1992/A2:1996)

Low-voltage switchgear and controlgear assemblies -- Part 1: Type-tested and partially type-tested assemblies

Niederspannung-Schaltgerätekombinationen -- Teil 1: Typgeprüfte und partiell typgeprüfte Kombinationen

Ensembles d'appareillage à basse tension -- Partie 1: Ensembles de série et ensembles dérivés de série

Ta slovenski standard je istoveten z: **EN 60439-1:1994/A2:1997**

ICS:

29.130.20	Nizkonapetostne stikalne in krmilne naprave	Low voltage switchgear and controlgear

SIST EN 60439-1:1995/A2:1998 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60439-1/A2

January 1997

UDC 621.316.54:621.3.027.2:620.1
ICS 29.120.60

Descriptors: Switchgear and controlgear, low voltage, switchgear and controlgear assembly, type-tested assembly, partially type-tested assembly, definitions, characteristics, tests

English version

Low-voltage switchgear and controlgear assemblies Part 1: Type-tested and partially type-tested assemblies (IEC 439-1:1992/A2:1996)

Ensembles d'appareillage à basse tension
Partie 1: Ensembles de série et ensembles dérivés de série
(CEI 439-1:1992/A2:1996)

Niederspannung-Schaltgeräte-kombinationen
Teil 1: Typgeprüfte und partiell typgeprüfte Kombinationen
(IEC 439-1:1992/A2:1996)

This amendment A2 modifies the European Standard EN 60439-1:1994; it was approved by CENELEC on 1996-12-09. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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

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

Ref. No. EN 60439-1:1994/A2:1997 E

Foreword

The text of document 17D/179/FDIS, future amendment 2 to IEC 439-1:1992, prepared by SC 17D, Low-voltage switchgear and controlgear assemblies, of IEC TC 17, Switchgear and controlgear, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A2 to EN 60439-1:1994 on 1996-12-09.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1997-09-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 1997-09-01

For products which have complied with EN 60439-1:1994, with its corrigenda August 1994 und February 1995 and its amendments A1:1995 und A11:1996 before 1997-09-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2002-09-01.

Endorsement notice

The text of amendment 2:1996 to the International Standard IEC 439-1:1992 was approved by CENELEC as an amendment to the European Standard without any modification.

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
439-1

1992

AMENDEMENT 2
AMENDMENT 2

1996-11

Amendement 2

Ensembles d'appareillage à basse tension

Partie 1:
Ensembles de série et ensembles dérivés de série

Amendment 2

Low-voltage switchgear and controlgear assemblies

Part 1:
Type-tested and partially type-tested assemblies

Bureau central de la Commission Electrotechnique Internationale 3, rue de Varembé Genève Suisse

Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE
E

Pour prix, voir catalogue en vigueur
For price, see current catalogue

FOREWORD

This amendment has been prepared by subcommittee 17D: Low-voltage switchgear and controlgear assemblies, of IEC technical committee 17: Switchgear and controlgear.

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

FDIS	Report on voting
17D/179/FDIS	17D/185/RVD

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

Page 15

2.1.5 *Functional unit*

Add, at the end of the subclause, the following note:

NOTE – Conductors which are connected to a functional unit but which are external to its compartment or enclosed protected space (e.g. auxiliary cables connected to a common compartment) are not considered to form part of the functional unit.

Page 25

Add the following new subclause:

2.4.16 *Enclosed protected space*

A part of an ASSEMBLY intended to enclose electrical components and which provides specified protection against external influences and contact with live parts.

Page 99

7.7 *Internal separation of ASSEMBLIES by barriers or partitions*

Replace the text of this subclause by the following:

One or more of the following conditions can be obtained by dividing ASSEMBLIES by means of partitions or barriers (metallic or non-metallic) into separate compartments or enclosed protected spaces:

– protection against contact with hazardous parts belonging to the adjacent functional units. The degree of protection shall be at least IPXXB;

– protection against the passage of solid foreign bodies from one unit of an ASSEMBLY to an adjacent unit. The degree of protection shall be at least IP2X.

Unless otherwise stated by the manufacturer, both conditions shall apply.

NOTE – The degree of protection IP2X covers the degree of protection IPXXB.

The following are typical forms of separation by barriers or partitions (for examples, see annex D).

Main criteria	Subcriteria	Form
No separation		Form 1
Separation of busbars from the functional units	Terminals for external conductors not separated from busbars	Form 2a
	Terminals for external conductors separated from busbars	Form 2b
Separation of busbars from the functional units and separation of all functional units from one another. Separation of the terminals for external conductors from the functional units, but not from each other	Terminals for external conductors not separated from busbars	Form 3a
	Terminals for external conductors separated from busbars	Form 3b
Separation of busbars from the functional units and separation of all functional units from one another, including the terminals for external conductors which are an integral part of the functional unit	Terminals for external conductors in the same compartment as the associated functional unit	Form 4a
	Terminals for external conductors not in the same compartment as the associated functional unit, but in individual, separate, enclosed protected spaces or compartments	Form 4b

The form of separation and higher degrees of protection shall be the subject of an agreement between manufacturer and user.

See 7.4.2.2.2 with regard to stability and durability of barriers and partitions.

See 7.4.6.2 with regard to accessibility for maintenance on disconnected functional units.

See 7.4.6.3 with regard to accessibility for extension under voltage.

Page 119

Table 8 – Standard cross-sections of copper conductors corresponding to the test current

Replace the table 8 by the following table:

Table 8 – Test copper conductors for test currents up to 400 A inclusive

Range of test current[1] A		Conductor size[2), 3)]	
		mm²	AWG/MCM
0	8	1,0	18
8	12	1,5	16
12	15	2,5	14
15	20	2,5	12
20	25	4,0	10
25	32	6,0	10
32	50	10	8
50	65	16	6
65	85	25	4
85	100	35	3
100	115	35	2
115	130	50	1
130	150	50	0
150	175	70	00
175	200	95	000
200	225	95	0000
225	250	120	250
250	275	150	300
275	300	185	350
300	350	185	400
350	400	240	500

[1] The value of the test current shall be greater than the first value in the first column and less than or equal to the second value in that column.

[2] For convenience of testing and with the manufacturer's consent, smaller conductors than those given for a stated test current may be used.

[3] Either of the two conductors specified for a given test current range may be used.

Page 145

8.2.7 *Verification of degree of protection*

Replace the first sentence by the following:

The degree of protection provided in accordance with 7.2.1 and 7.7 shall be verified in accordance with IEC 529, making, where necessary, adaptations to suit the particular type of the ASSEMBLY.

Page 149

8.3.3 *Checking of protective measures and of the electrical continuity of the protective circuits*

Replace the first paragraph by the following:

The protective measures with regard to protection against direct and indirect contact (see 7.4.2 and 7.4.3) shall be checked.