

Specification for

Low-voltage switchgear and controlgear assemblies —

**Part 3: Particular requirements for
low-voltage switchgear and controlgear
assemblies intended to be installed in
places where unskilled persons have
access to their use — Distribution
boards**

ICS: 29.130.20

National foreword

This British Standard is the UK implementation of EN 60439-3:1991+A2:2001, incorporating corrigenda April 1994, December 2005 and November 2009. It was derived by CENELEC from IEC 60439-3:1990 incorporating amendments 1:1993 and 2:2001. It supersedes BS EN 60439-3:1991 which is withdrawn.

The CENELEC common modifications have been implemented at the appropriate places in the text. The start and finish of each common modification is indicated in the text by tags [C] [C]. Where a common modification has been introduced by amendment, the tags carry the number of the amendment. For example, the common modifications introduced by CENELEC amendment A11 are indicated by [C11] [C11].

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1] [A1]. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by [A1] [A1].

The UK participation in its preparation was entrusted by Technical Committee PEL/17, Switchgear, controlgear, and HV-LV co-ordination, to Subcommittee PEL/17/3, Low voltage switchgear and controlgear assemblies.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

The foreword and preface of IEC 439-3:1990 which do not form part of the text of EN 60439-3 have been quoted in National annex NA. The deleted parts of the original IEC text are quoted in National annex NA.

The foreword of the EN makes reference to “date of withdrawal (dow) of conflicting national standards” as “1994-12-01”. In this case the relevant national standard is BS EN 60439-3 but the date of withdrawal relates only to those parts of the British Standard subject to amendment A1. Certificates and marks will not be awarded after this date with respect to the British Standard not incorporating amendment A1. They will be awarded only to the amended British Standard. However, such certificates and marks already awarded with respect to the British Standard not incorporating amendment A1 may continue to apply for production until 1999-12-01.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

Amendments/corrigenda issued since publication

Amd. No.	Date	Comments
8302	August 1994	Implementation of IEC amendment 1:1993 with CENELEC endorsement A1:1994
13466	1 May 2002	Implementation of IEC amendment 2:2001 with CENELEC endorsement A2:2001
16213 Corrigendum No. 1	30 June 2006	Correction to reference of UK A-deviation in Annex ZA
17184 Corrigendum No. 2	31 July 2007	Addition of supersession details
	28 February 2010	Implementation of CENELEC corrigendum November 2009: Annex 2A replaced

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English version

Low-voltage switchgear and controlgear assemblies — Part 3: Particular requirements for low-voltage switchgear and controlgear assemblies intended to be installed in places where unskilled persons have access for their use — Distribution boards

(IEC 60439-3:1990, modified)

Ensembles d'appareillage à basse tension —
Troisième partie: Règles particulières pour
ensembles d'appareillage BT destinés à être installés
en des lieux accessibles à des personnes non
qualifiées pendant leur utilisation —
Tableaux de répartition
(CEI 60439-3:1990, modifiée)

Niederspannung-Schaltgeräte-kombinationen —
Teil 3: Besondere Anforderungen an
Niederspannung-Schaltgeräte-kombinationen, zu
deren Bedienung Laien Zutritt haben
Installationsverteiler
(IEC 60439-3:1990, modifiziert)

This European Standard was approved by CENELEC on 10 December 1990. 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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Foreword

Following the decision taken by CENELEC Technical Committee TC 17D at their Brussels meeting in October 1989, the International Standard IEC 60439-3:1990, together with the common modifications prepared by CLC/TC 17D, was submitted to the CENELEC Unique Acceptance Procedure (UAP) in April 1990 for acceptance as a European Standard.

The text of the draft was approved by CENELEC as EN 60439-3 on 10 December 1990.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1991-12-01
- latest date of withdrawal of conflicting national standards (dow) 1991-12-01

For products which have complied with the relevant national standard before 1991-12-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1996-12-01.

Endorsement notice

The text of the International Standard IEC 439-3: 1990 was approved by CENELEC as a European Standard with agreed common modifications as given below.

Common modifications

- 7.6.1** Replace the text by:
- Fuses for outgoing circuits shall comply with the general requirements of IEC 60269-3 or with a relevant national standard where it is an established practice for such use.

Foreword to amendment A1

The text of document 17D(CO)53, as prepared by Sub-Committee 17D: Low voltage switchgear and controlgear assemblies, of IEC Technical Committee 17: Switchgear and controlgear, was submitted to the IEC-CENELEC parallel vote in September 1992.

The reference document was approved by CENELEC as amendment A1 to EN 60439-3 on 8 December 1993.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1994-12-01
- latest date of withdrawal of conflicting national standards (dow) 1994-12-01

For products which have complied with EN 60439-3:1991 before 1994-12-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1999-12-01.

Foreword to amendment A2

The text of document 17D/239/FDIS, future amendment 2 to IEC 60439-3:1990, 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 60439-3:1991 on 2001-05-01.

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) 2002-02-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2004-05-01

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1 General

1.1 Scope

Replace the second note by:

This standard gives supplementary requirements for such enclosed distribution boards (DBU), which are stationary, type tested assemblies (TTA) for indoor use, containing protective devices and intended for use either in domestic (household) applications or in other places where unskilled persons have access for their use. Control and/or signalling devices may also be included. They are for use on a.c., with a nominal voltage to earth not exceeding 300 V. The outgoing circuits contain short-circuit protective devices, each having a rated current not exceeding 125 A with a total incoming load current not exceeding 250 A.

NOTE The nominal voltage to earth in an IT system is taken as the nominal voltage of the system.

Unskilled persons normally have access to these assemblies, e.g. for switching operations and for replacing fuse-links. **A1** *Text deleted* **A1**

2 Definitions

2.1 General definitions

2.1.1.2

partially type tested assembly (PTTA)

not applicable

2.1.9

test situation

not applicable

A2 2.1.12 **A2**

distribution board

an assembly containing switching or protective devices (e.g. fuses or miniature circuit-breakers) associated with one or more outgoing circuits fed from one or more incoming circuits, together with terminals for the neutral and protective circuit conductors. It may also include signalling and other control devices. Means of isolation may be included in the board or may be provided separately

2.2 Definitions concerning constructional units of assemblies

2.2.8

withdrawable part

not applicable

2.2.9

connected position

the position of a removable part when it is fully connected for its normally intended function

2.2.10

test position

not applicable

2.2.11

disconnected position

not applicable

2.3 Definitions concerning the external design of assemblies

2.3.1

open-type assembly

not applicable

2.3.2

dead front assembly

not applicable

2.3.3.3**desk-type assembly**

not applicable

2.3.4**busbar trunking system (busway)**

not applicable

2.4 Definitions concerning the structural parts of assemblies**A₂ 2.4.18 A₂****parts for aesthetic purposes**

parts which are provided only to improve the appearance of an assembly and are not intended to give any electrical or mechanical protection

2.5 Definitions concerning the conditions of installation of assemblies**2.5.4****movable assembly**

not applicable

2.7**gangways within assemblies**

not applicable

3 Classification of assemblies

Delete:

— the conditions of installation with respect to mobility (see 2.5.3 and 2.5.4);

A₂ — the form of internal separation (see 7.7);

— the types of electrical connections of functional units (see 7.11). **A₂**

4 Electrical characteristics of assemblies**4.2 Rated current (of a circuit of an assembly)**

Renumber existing 4.2 to read 4.2.1.

Add a new sub-clause:

4.2.2 Rated current of a distribution board

The rated current of a distribution board is that stated by the manufacturer as the rated current of the incoming circuit or circuits. If there is more than one incoming circuit the rated current of a distribution board is the arithmetic sum of the rated currents of all incoming circuits that are intended to be used simultaneously. This current or currents shall be carried without the temperature rise of the several parts exceeding the limits specified in 7.3 when tested according to 8.2.1.

A₂ 4.7 A₂ Rated diversity factor

Replace the note and Table 1 by the following:

For the purpose of this standard the number of main circuits is the number of outgoing circuits connected to each supply phase. In the absence of information concerning the actual currents, the conventional values given in Table 1 may be used.

Table 1

Number of main circuits	Diversity factor
2 and 3	0.8
4 and 5	0.7
6 to 9 inclusive	0.6
10 (and above)	0.5

5 Information to be given regarding the assembly

5.1 Nameplates

Add as second sentence:

The nameplates may be mounted behind a door or removable cover.

A2 Text deleted **A2**

In c) replace 60439-1 by 60439-3.

Replace the text of l) by:

l) degree of protection (see 7.4.2.2.1), if greater than IP2XC according to IEC 60529;

A2 Add after item l)

r) Not applicable.

s) Not applicable.

u) rated current of distribution board. The rated current of the distribution board shall be marked on the ASSEMBLY or the nameplate. **A2**

Add:

A2 Replace “Information specified under items a), b), c), d), e), l) and r)” by “Information specified under items a), b), c), d), e) and l)” **A2**

A1 Replace “Information specified under items c) to q)...” by “Information specified from the remaining items.” **A1**

A2 Text deleted **A2**

6 Service conditions

A2 6.1.2.3 Pollution degree

Replace the last paragraph by:

“Standard pollution degree for an ASSEMBLY to IEC 60439-3:

ASSEMBLIES to this standard are generally for use in a pollution degree 2 environment. Other pollution degrees may apply, depending upon particular applications or the micro-environment.

NOTE The pollution degree of the micro-environment may be influenced by installation in an enclosure.” **A2**

6.2.9 Delete the examples.

Add:

For flush-type assemblies recessing into a wall is not considered to be a special condition.

7 Design and construction

7.1.1 General

Add the following at the beginning of the first paragraph:

Assemblies intended for use by unskilled persons shall be designed as type-tested LV switchgear and controlgear assemblies (TTA).

Add at the end of the first paragraph:

For parts of distribution boards which are made of insulating materials the resistance to heat shall be verified according to **A2** 8.2.12 **A2**. The resistance of insulating materials to abnormal heat and to fire due to internal electric effects shall be verified according to **A2** 8.2.13 **A2**.

Add a second sentence to the second paragraph:

Ferrous structural parts of distribution boards, including enclosures, shall have adequate resistance to rusting when tested in accordance with **A2** 8.2.11 **A2**.