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Electrical installations of buildings – Part 7-717: Requirements for special installations or locations – Mobile or transportable units

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HARMONIZATION DOCUMENT **HD 60364-7-717**

DOCUMENT D'HARMONISATION

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English version

Electrical installations of buildings
Part 7-717: Requirements for special installations or locations – Mobile or transportable units
(IEC 60364-7-717:2001, modified)

Installations électriques des bâtiments
Partie 7-717: Règles pour les installations ou emplacements spéciaux – Unités mobiles ou transportables
(CEI 60364-7-717:2001, modifiée)

Elektrische Anlagen von Gebäuden
Teil 7-717: Anforderungen für Betriebstätten, Räume und Anlagen besonderer Art – Elektrische Anlagen auf Fahrzeugen und in transportablen Baueinheiten
(IEC 60364-7-717:2001, modifiziert)

This Harmonization Document was approved by CENELEC on 2004-06-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document on a national level.

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

This Harmonization Document exists in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, 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. HD 60364-7-717:2004 E

Foreword

The text of the International Standard IEC 60364-7-717:2001, prepared by IEC TC 64, Electrical installations and protection against electric shock, together with the common modifications prepared by SC 64A, Protection against electric shock, of Technical Committee CENELEC TC 64, Electrical installations of buildings, was submitted to the formal vote and was approved by CENELEC as HD 60364-7-717 on 2004-06-01.

In this Harmonization Document the common modifications to the International Standard are indicated by a vertical line in the left margin of the text.

The following dates were fixed:

– latest date by which the existence of the HD has to be announced at national level	(doa)	2004-12-01
– latest date by which the HD has to be implemented at national level by publication of a harmonized national standard or by endorsement	(dop)	2005-06-01
– latest date by which the national standards conflicting with the HD have to be withdrawn	(dow)	2007-06-01

Annexes ZA, ZB and ZC have been added by CENELEC.

Introduction

The requirements of this HD 60364-7-717 modify or replace certain of the general requirements of HD 384.

The clause numbering follows the pattern and corresponding references of HD 384.

The numbers following the particular number of Part 7-717 are those of the corresponding parts or clauses of HD 384.

The absence of reference to a chapter, a section or a clause means that the corresponding general requirements of HD 384 are applicable.

717 Mobile or transportable units

717.1 Scope

The particular requirements as specified in this part of HD 384 are applicable to mobile or transportable units.

For the purpose of this standard, the term "unit" is intended to mean a vehicle and/or mobile or transportable structure in which all or part of an electrical installation is contained.

Units are

– either of the mobile type, e.g. vehicles (self-propelled or towed);
– or of the transportable type, e.g. containers or cabins placed on a base frame.

Examples of the intended use are for broadcasting, medical services, advertising, fire fighting, workshops, etc.

The requirements are not applicable to

– generating sets;
– marinas and pleasure craft;
– mobile machinery in accordance with EN 60204-1;
– caravans, motor caravans and mobile homes;
– traction equipment of electric vehicles;
– vending, trailer and similar mobile units.

Where applicable, additional requirements as laid down in other clauses of Part 7 are to be taken into consideration, e.g. for showers, medical locations, etc.

717.2 Normative references

See Annex ZA.

717.3 Assessment of general characteristics

717.31 Purposes, supplies and structures

717.312 Types of distribution systems

717.312.2 Types of earthing system

717.312.2.1 TN System

The use of the TN-C system is not permitted inside any unit.

717.313 Supplies

The following methods can be used to supply a unit:

a) connection to a low voltage generating set in accordance with IEC 60364-5-551 (see Figures 717A.1 and 717A.2), or

b) connection to a fixed electrical installation in which the protective measures are effective (see Figures 717B.1 and 717B.2), or

c) connection through means providing simple separation, in accordance with EN 61140, from a fixed electrical installation (see Figures 717C.1, 717C.2 and 717C.3), or

d) connection through means providing electrical separation from a fixed electrical installation (see example in Figure 717D).

NOTE 1 In cases a), b) and c), an earth electrode may be provided.

NOTE 2 In the case of Figure 717C.1, an earth electrode may be necessary for protective purposes (see 717.413.1.5.3).

NOTE 3 Simple separation using a TN system or electrical separation is appropriate, for example when information technology or other high leakage current equipment is used in the unit, or when reduction of electromagnetic influence is necessary.

A unit may be supplied by any method in accordance with a), b), c), or d), or by the method a) combined with one of the other methods.

The sources, means of connection or separation may be within the unit.

Where in the cases of supplies a) Figure 717A.2 and b) Figures 717B.1 and 717B.2 the mobile or transportable unit is connected via a polarised plug and socket connection, overcurrent protective devices shall be installed in the live conductors at the origin of the unit.

717.4 Protection for safety

717.41 Protection against electric shock

717.412 Protection against direct contact

717.412.4 Protection by placing out of reach is not permitted.

717.412.5 Additional protection by residual current protective devices with a rated residual operating current not exceeding 30 mA is necessary for all socket-outlets intended to supply current-using equipment outside the unit, with the exception of socket-outlets which are supplied from circuits with protection by

– SELV, or

– PELV, or

– electrical separation.

717.413 Protection against indirect contact

717.413.1 Protection by automatic disconnection of supply

a) For supply in accordance with 717.313 a), only TN and IT systems are permitted and protection shall be provided by automatic disconnection of supply, and

  – in a TN system, 717.413.1.3 applies,

  – in an IT system, 717.413.1.5 applies.

b) For supply in accordance with 717.313 b), only TN and TT systems are permitted and automatic disconnection of the supply shall be provided by a residual current protective device, with a rated residual current not exceeding 30 mA. This is not required for circuits inside units having a non-conductive enclosure where protection by earth-free local equipotential bonding is applied (see Figure 717B.2).

A label shall be fixed in proximity of socket-outlets supplying equipment within the unit stating that the socket-outlets shall not be used to supply equipment outside the unit.

c) In all cases a) to d) of 717.313, any equipment installed between the source of supply and the protective devices providing the automatic disconnection of the supply within the unit, including these protective devices themselves, shall be protected by use of Class II equipment or by equivalent insulation.

717.413.1.2 Equipotential bonding

717.413.1.2.1 Main equipotential bonding

Accessible conductive parts of the unit, such as chassis, body structure or tube systems, shall be interconnected and, through the main equipotential bonding conductors, connected to the protective conductor of the TT, IT or TN systems within the unit.

The main equipotential bonding conductor shall be finely stranded. Type 227 IEC 02 in accordance with IEC 60227-3 is appropriate.

717.413.1.3 TN system

717.413.1.3.1 In the case of use of the TN system in units with a conductive enclosure and supplied according to 717.313 a) or c), this enclosure shall be connected to the neutral point or, if not available, a phase conductor (see Figures 717A.1, 717A.2 and 717C.3).

In the case of use of the TN system in a unit without a conductive enclosure, the exposed conductive parts of the equipment inside the unit shall be connected by means of a protective conductor to the neutral point or, if not available, to a live conductor.

717.413.1.5 IT system

717.413.1.5.3 In the case of use of the IT system in units with a conductive enclosure, a connection of the exposed conductive parts of the equipment to the conductive enclosure is necessary.

In the case of units without a conductive enclosure, the exposed conductive parts inside shall be connected to one another and to a protective conductor.

An IT system can be provided by

a) an isolating transformer or a low voltage generating set in accordance with EN 61557-8, with an insulation monitoring device installed,

b) a transformer providing simple separation, e.g. in accordance with EN 61558-1, only in the following cases:

- an insulation monitoring device is installed with or without an earth electrode, providing automatic disconnection of the supply in case of a first fault between live parts and the frame of the unit (see Figure 717C.2); or
- a residual current device and an earth electrode are installed to provide automatic disconnection in the case of failure in the transformer providing the simple separation (see Figure 717C.1). Each circuit provided for the supply of equipment for use outside the unit shall be protected by a separate residual current protective device with rated residual current not exceeding 30 mA.

717.413.3 Protection by non conducting location

Protection by non conducting location is not permitted.

717.413.5 Protection by electrical separation

(See Figure 717D).

717.473 Measures of protection against overcurrent

717.473.3 Protection according to the type of circuits

717.473.3.1 In the case where the supply is in accordance with 717.313 a) or c), and where a line conductor is connected to the conductive enclosure of the unit, no overcurrent protective device is required in this line conductor which is connected to the conductive enclosure of the unit.

717.5 Selection and erection of electrical equipment

717.51 Common requirements

717.514 Identification

A plate shall be affixed at a location which is clearly visible to the user of the unit, stating in clear and unambiguous terms the types of supply which may be connected to the unit. The descriptions set out in 717.313 shall be used.

717.52 Wiring systems

717.52.01 Cables type H07RN-F according to HD 22.4 or cables of equivalent design having a minimum cross-sectional area of 2,5 mm² Cu shall be used for connecting the unit to the supply. The flexible cable shall enter the unit by an insulating inlet in such a way as to minimize the possibility of any insulation damage or fault which might energize the exposed conductive parts of the unit. The cable sheath shall be firmly gripped by the cable gland of the connector or otherwise anchored to the unit.

717.52.02 The following or other equivalent cable types are permitted for the internal wiring of the unit:

a) PVC insulated single-core cable in accordance with HD 21.3 or insulated conductor in accordance with HD 21.7 and laid in conduits in accordance with EN 50086-1;

b) PVC insulated cables in accordance with HD 21.3 or rubber insulated cables in accordance with HD 22.4, if precautionary measures are taken that no mechanical damage is likely to occur due to the sharp-edged parts or abrasion.

The requirements of this subclause do not apply to information technology equipment.

Flexible cables should be used.

717.55 Other equipment

717.55.01 Plugs and socket-outlets shall comply with EN 60309-1 or with other national standards.

Connecting devices used to connect the unit to the supply shall comply with EN 60309-2 and with the following requirements:

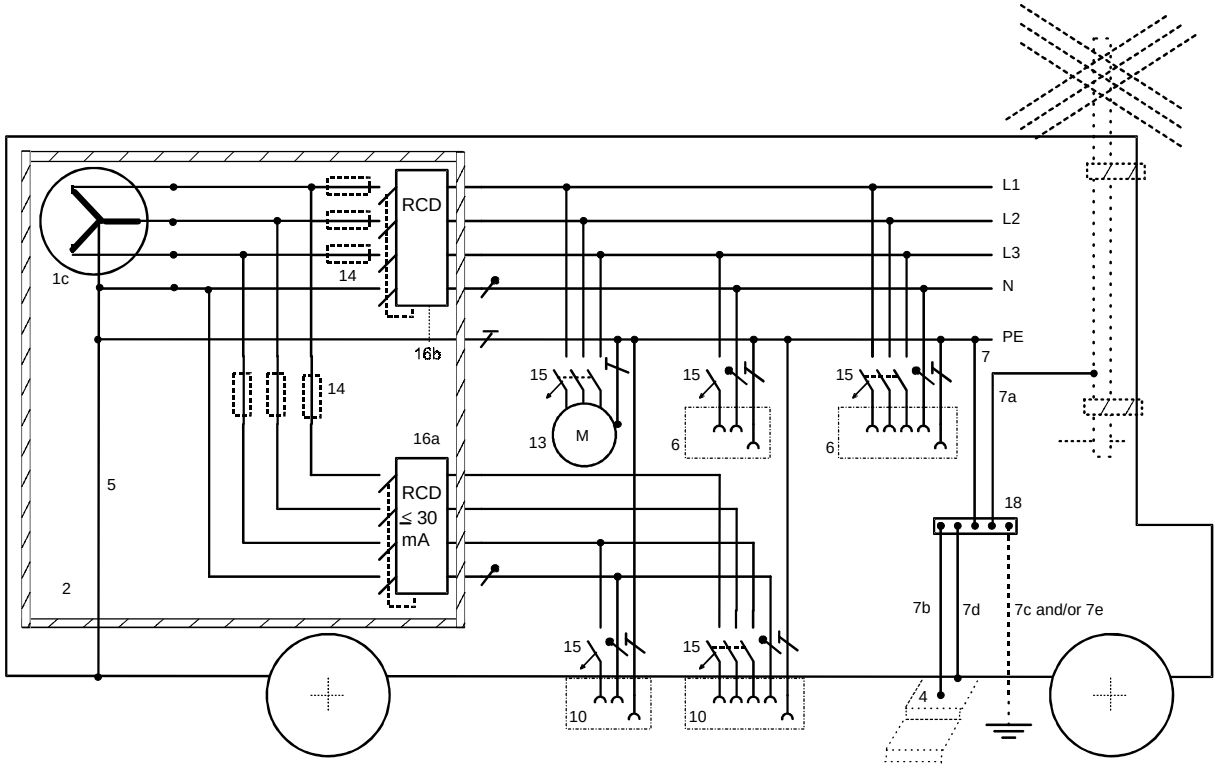
– plugs shall have an enclosure of insulating material;

– plugs and socket-outlets shall afford a degree of protection of not less than IP44, if located outside;

– appliance inlets with their enclosures shall provide a degree of protection of at least IP55;

– the plug part shall be situated on the unit.

717.55.02 Socket-outlets located outside the unit shall be provided with an enclosure affording a degree of protection not less than IP54.



NOTE Protection by automatic disconnection of supply by residual current protective devices (RCD).

Figure 717A.1 – Example of connection to a Class I or Class II low voltage generating set located inside the unit with or without an earth electrode

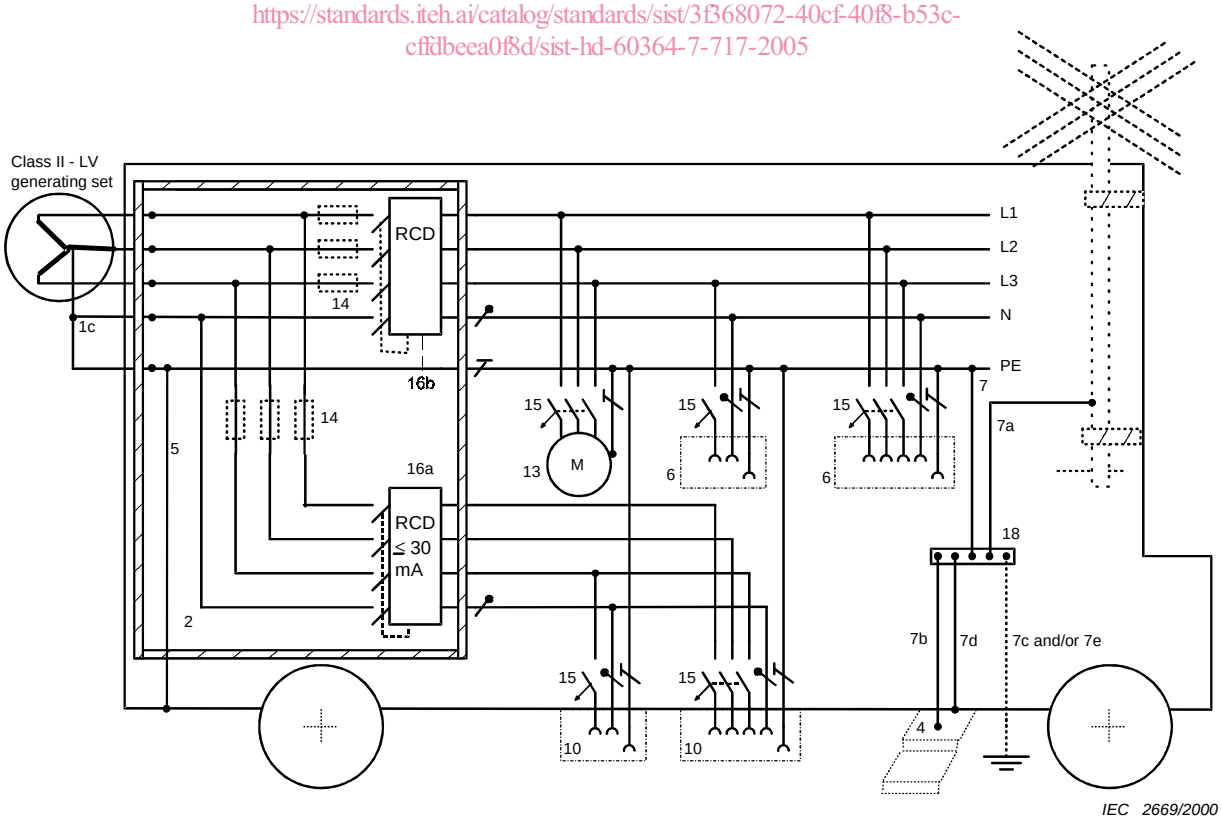


Figure 717A.2 – Example of connection to a Class II low voltage generating set located outside the unit