© IEC 2024

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

_____

IEC 62477-1
Edition 2.0 2022-05

SAFETY REQUIREMENTS FOR POWER ELECTRONIC CONVERTER SYSTEMS AND EQUIPMENT

Part 1: General

IEC 62477-1
Édition 2.0 2022-05

EXIGENCES DE SÉCURITÉ APPLICABLES AUX SYSTÈMES ET MATÉRIELS ÉLECTRONIQUES DE CONVERSION DE PUISSANCE

Partie 1: Généralités

CORRIGENDUM 1

Corrections to the French version appear after the English text.

Les corrections à la version française sont données après le texte anglais.

3.33

Replace the term and definition (but not the note) with the following new term and definition:

(electrical) installation
assembly of electrical equipment to fulfil specific purposes

Note 1 to entry: The word "installation" is also used in this document to denote the process of installing a *PECS*. In these cases, the word does not appear in italics.

[SOURCE: IEC 60050-826:2022, 826-10-01, modified – the note to entry has been added.]

3.36

Replace, in the term, "LV" *with* "**LV**" (in bold).

3.68

Replace, in the term, "*SCPD*" *with* "**SCPD**" (in normal bold).

3.74

Replace, in the term, "SPD" *with* "**SPD**" (in bold).

4.3.1 General

Replace the sixth paragraph with the following new paragraph:

For marking, see 6.2.1.4.

4.3.3 Short-circuit coordination (backup protection)

Replace the fifth paragraph with the following new paragraph:

IEC 62477-1:2022-05/COR1:2024-04(en-fr)

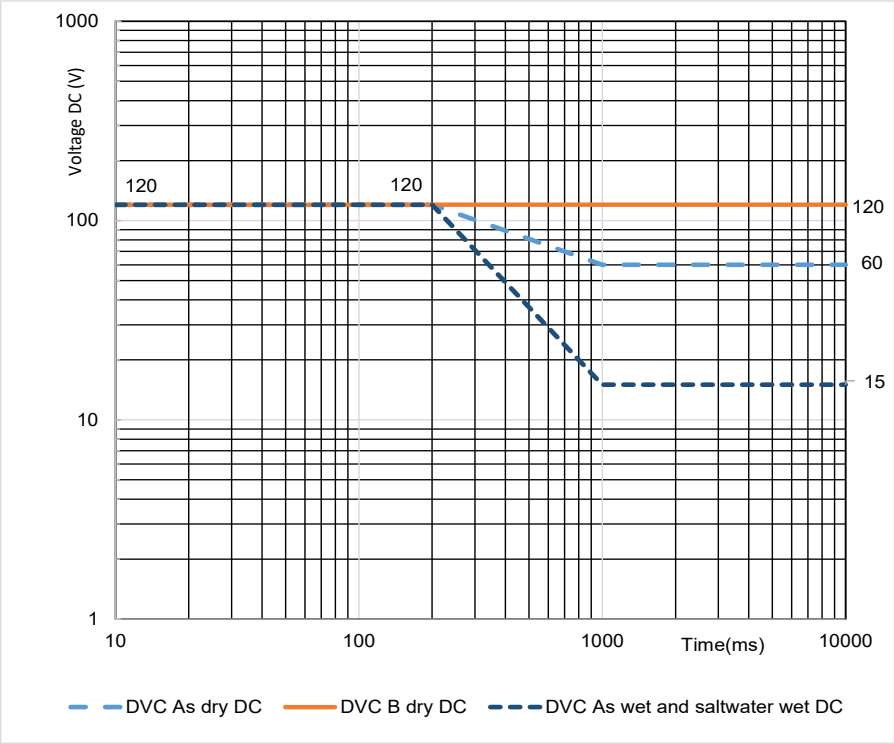
Documents
Document Sharing Hub
Full document details: IEC 62477-1-2022 cor1-2024

Compliance shall be checked by

- visual inspection in 5.2.1, and
- simulation or tests of 5.2.4.4 and 5.2.4.5

Figure 5 – Time-voltage zones for *accessible circuits* of *DVC As* and *DVC B* – DC during *single fault conditions*

Replace Figure 5 with the following new figure:



4.4.7.1.4 *Overvoltage category (OVC)*

*Replace, in the second paragraph, the second bullet point starting with "*Equipment of *overvoltage category III (OVC III)* is equipment*…", with the following new bullet point:*

- *PECS* of *overvoltage category III (OVC III)* is equipment in fixed *installations* and for cases where the reliability and the availability of the equipment are subject to special requirements.

4.4.7.2.2 *SPD* monitoring

Replace the first paragraph with the following new paragraph:

If the *PECS* manufacturer bundles an external *SPD* with their product for the purpose of overvoltage category reduction, this device shall have a monitoring circuit as required in 4.4.7.2.3 or 4.4.7.2.4 that enables the *PECS* to create an indication when the device is damaged by an overvoltage. If the *SPD* is internal to a *PECS*, the test of 5.2.3.15 applies.

4.4.7.4.2 *Clearances* for *reinforced insulation*

Replace in the first paragraph, the first bullet point with the following new text:

- the next higher value of *impulse withstand voltage* in column 1 of Table 8;

Documents
Document Sharing Hub
Full document details: IEC 62477-1-2022 cor1-2024

4.4.7.4.5 *Clearance* to conductive *enclosures*

*Replace, in the second paragraph, "*During and following*" with the following:*

*"*After*"*

4.11.10.3 Connection to external conductors

Replace the last paragraph with the following new paragraph:

For marking, see 6.3.7.4.1.

4.12.6 Strain relief

Replace, in the third paragraph, item c) with the following new text:

c) the cord shall not be damaged when subjected to a torque of the value and time shown in 5.2.2.8 as close as possible to the external end of the cord strain relief or bushing;

Table 23 – Test overview

Replace the fourth row with the following new row:

Clearance and *creepage distance*s test	X			4.4.7.4, 4.4.7.5	5.2.2.1

5.2.2.4.2.1 General

Replace, in the fourth paragraph, "During" *with*:

*"*After*"*

5.2.3.3 Alternative to *impulse withstand voltage* test (*type test*, *sample test*)

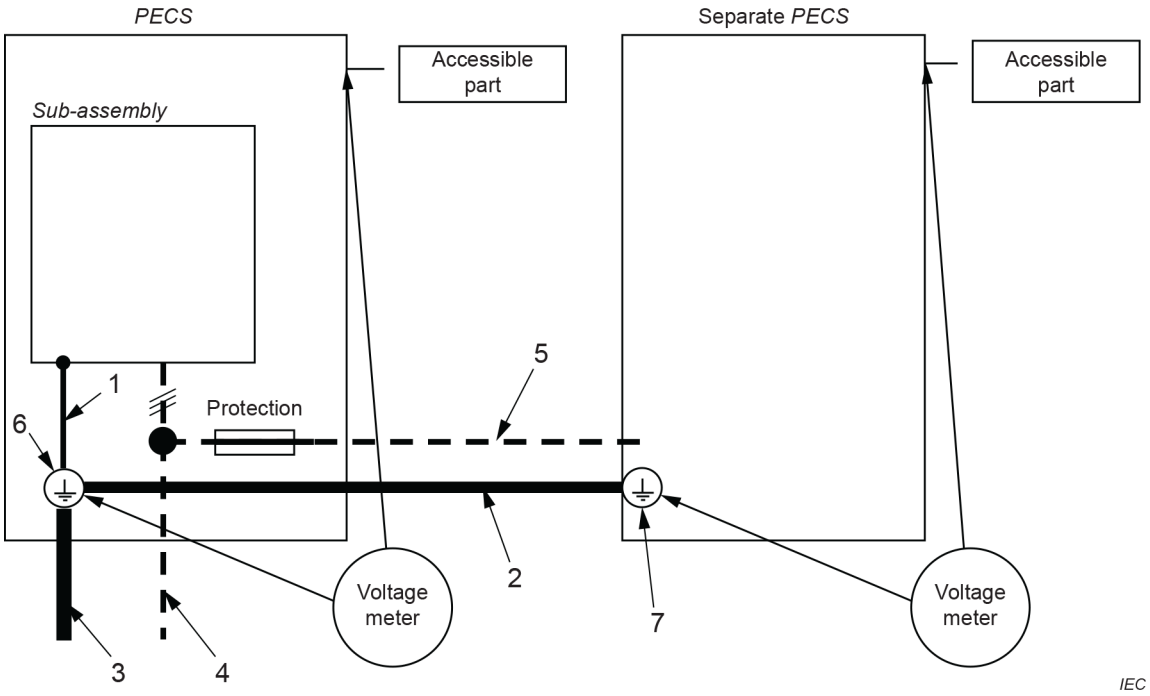
Add, in the fifth paragraph, after the last sentence, the following new sentence:

The altitude correction according to Table 26 applies.

Documents
Document Sharing Hub
Full document details: IEC 62477-1-2022 cor1-2024

Figure 18 – *Protective equipotential bonding* impedance test for separate *PECS* with power fed from the *PECS* with protection for the power cable

Replace Figure 18 with the following new figure:



5.2.3.13.2 Standard test procedure for non-separable thin sheet material (*type test*)

Replace, in the second paragraph “materal” *with* “material”.

5.2.3.13.3 Mandrel test (*type test*)

Replace, in the second paragraph, “materal” *with* “material”.

Table 32 – AC *short-time withstand current* test, minimum *PECS* requirements

Replace footnote b with the following new footnote:

[b] Values compatible with Table 104 of IEC 62040-1:2017.

Documents
Document Sharing Hub
Full document details: IEC 62477-1-2022 cor1-2024

Table 33– Environmental tests

Replace Table 33 with the following new table:

Test condition	Indoor conditioned IEC 60721-3-3	Indoor unconditioned IEC 60721-3-3	Outdoor unconditioned IEC 60721-3-4
Climatic	Dry heat (see 5.2.6.3.1) Damp heat (see 5.2.6.3.2)	Dry heat (see 5.2.6.3.1) Damp heat (see 5.2.6.3.2)	Dry heat (see 5.2.6.3.1) Damp heat (see 5.2.6.3.2)
Chemically active substances	No test requirement	No test requirement	Salt mist [a] (see 5.2.6.5)
Mechanically active substances	No test requirement	No test requirement	Dust (see 5.2.6.6) Sand (see 5.2.6.7)
Mechanical	Vibration (see 5.2.6.4)	Vibration (see 5.2.6.4)	Vibration (see 5.2.6.4)
Biological	No test requirement	No test requirement	No test requirement
UV resistance	No test requirement	No test requirement	see 5.2.5.9
[a] Refer to footnote [a] in Table 18.			

6.1 General

Replace, in the second paragraph, “It” *with* “This information”.

Table 40 – Marking location

Replace Table 40 with the following new table:

Information	Subclause reference	Location [a]					Technical subclause reference
		1	2	3	4	5	
Identifying the product	6.2.1.2	X	X		X	X	4.1
Electrical ratings for each *port*	6.2.1.3	X	X			X	4.1
Supplementary information for each *port*	6.2.1.4					X	4.1
Liquid cooled *PECS*	6.2.1.5	X	X	X		X	4.1
General *PECS* marking	6.2.1.6					X	4.1
Accessories [b]	6.2.2	X	X		X	X	4.1
IP rating for enclosed *PECS*	6.3.2	X	X			X	4.1
Dimensional and mounting drawings	6.3.2					X	4.1
Mass information	6.3.2	X	X		X	X	4.1
Environment	6.3.3					X	4.9
Handling and mounting	6.3.4					X	4.2
Enclosure temperature	6.3.5					X	4.6.4.3
Open type PECS	6.3.6					X	4.4.3.3, 4.6.4.3
Interconnection and wiring diagrams	6.3.7.2					X	4.1, 4.2
Conductor (cable) selection	6.3.7.3					X	4.11.10.2
Identification of *field wiring terminals*	6.3.7.4.1	X	X	X		X	4.11.5
Other details of *field wiring terminals*	6.3.7.4.2					X	4.11.10.3
Plug and socket-outlets	6.3.7.5	X	X	X		X	4.11.7
Commissioning	6.3.8					X	4.1, 4.2
Accessible parts and circuits	6.3.9.1	X				X	4.4.3.3, 4.4.2.1
Protective equipotential bonding circuit	6.3.9.3	X	X			X	4.4.2, 4.4.4.3.2,

Documents
Document Sharing Hub
Full document details: IEC 62477-1-2022 cor1-2024