



SLOVENSKI STANDARD
oSIST prEN 3841-100:2022
01-julij-2022

Aeronavtika - Odklopniki - Preskusne metode - 100. del: Splošno

Aerospace series - Circuit breakers - Test methods - Part 100: General

Luft- und Raumfahrt - Schutzschalter - Prüfverfahren - Teil 100: Allgemeines

Série aérospatiale - Disjoncteurs - Méthodes d'essais - Partie 100 : Généralités

Ta slovenski standard je istoveten z: **prEN 3841-100**
(standards.iteh.ai)

ICS:

49.060

Letalska in vesoljska
električna oprema in sistemi

<https://standards.iteh.ai/catalog/standards/sist/ef63e4cb-575f-4bbe-8e5d-22df41e59e73/osist-pren-3841-100-2022>

Aerospace electric
equipment and systems

oSIST prEN 3841-100:2022

en,fr,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 3841-100

May 2022

ICS 49.060

Will supersede EN 3841-100:2004

English Version

Aerospace series - Circuit breakers - Test methods - Part 100: General

Série aérospatiale - Disjoncteurs - Méthodes d'essais -
Partie 100 : Généralités

Luft- und Raumfahrt - Schutzschalter - Prüfverfahren -
Teil 100: Allgemeines

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ASD-STAN.

If this draft becomes a European Standard, CEN 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.

This draft European Standard was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (prEN 3841-100:2022) has been prepared by the Aerospace and Defence Industries Association of Europe — Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this document has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 3841-100:2004.

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prEN 3841-100:2022 (E)**1 Scope**

This document specifies the general conditions for test methods applicable to circuit breakers.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2995-006, *Aerospace series — Circuit breakers, single-pole, temperature compensated, rated currents 1 A to 25 A — Part 006: 6,3 mm & 2,8 mm blade terminal with polarized signal contact — Product standard*

EN 3773-006, *Aerospace series — Circuit breakers, single-pole, temperature compensated, rated currents 1 A to 25 A — Part 006: 6,3 mm blade terminal — Product standard*

EN 3774-006, *Aerospace series — Circuit breakers, single-pole, temperature compensated, rated currents 1 A to 25 A — Part 006: 6,3 mm blade terminal — Product standard*

IEC 60050-441,¹ *International electrotechnical vocabulary — Chapter 441: Switchgear, controlgear and fuse*

Mil-STD-202, *DEPARTMENT OF DEFENCE TEST METHOD STANDARD: ELECTRONIC AND ELECTRICAL COMPONENT PARTS*¹⁾

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-441 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

4 Conditions for test**4.1 Environmental conditions**

Unless stated otherwise, the following environmental conditions shall apply:

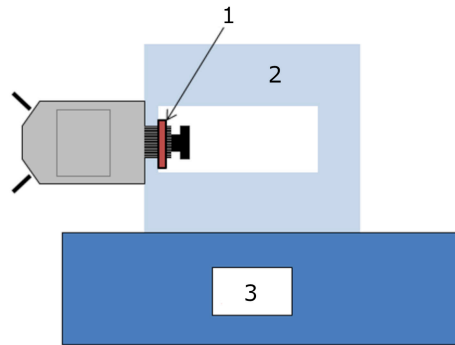
- ambient temperature (23 ± 5) °C;
- atmospheric pressure 840 hPa to 1 070 hPa;
- relative humidity ≤ 85 %.

4.2 Mounting conditions for mechanical tests

Mechanical tests shall be carried out with the circuit breakers mounted in their normal position on a metal plate with a minimum thickness of 2 mm. See Figure 1 and Figure 2.

¹⁾ Published by: DoD National (US) Mil. Department of Defense <https://www.defense.gov/>.

Mounting: Circuit breakers shall be mounted as designed in normal application (Figure 1). The mounting apparatus shall be free from resonance as described in MIL-STD-202, Method 201A.



Key

- 1 mounting nut
- 2 rigid block
- 3 vibrating plate

Figure 1 — Screw type power terminal



Key

- 1 non-conductive receptacle to be used with stop on terminals

Figure 2 — Blade type power terminal

4.3 Mounting conditions for thermal tests

For thermal tests the circuit breakers shall be mounted with the minimum distance between each other as specified in the product standard.

4.4 Connection requirements for electrical tests

For electrical tests the circuit breakers shall be connected to cables as shown in Table 1.

The cable shall be at least $(1 \pm 0,1)$ m long.

Where several circuit breakers or the poles of multi-pole circuit breakers are connected in series, the connecting cables between the circuit breakers or poles shall be 0,5 m long.

The cable lugs used shall be compatible with the circuit breakers' terminals.

Table 1

Current rating A	Cross section mm ²	AWG ^a	EN code	Power Blade Crimped Receptacle (TE Connectivity Part No. or Equivalent) -
Up to 1	0,6	20	2083-006	640903-1
1,5 to 6	1	18	2083-010	640903-1
7 to 10	1,2	16	2083-012	640905-1
11 to 15	2	14	2083-020	640905-1
16 to 20	3	12	2083-030	640907-1
21 to 25	5	10	2083-050	640907-1
26 to 40	5	10	2083-050	—
41 to 50	5	10	2083-050	—

Power blade crimped receptacle shall be used with 6,3 mm blade circuit breakers (EN 3773-006, EN 3774-006 and EN 2995-006).

^a AWG = American Wire Gauge

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5 List of test methods

See Table 2.

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Table 2

EN 3841-	Test
	Physical test methods
201	Visual inspection
202	Dimensions and masses
	Electrical test methods
301	Voltage drop
302	Insulation resistance
303	Dielectric strength
304	Tripping points
305	Short-circuit performance
306	Service life
307	Performance with a locked tripping system
308	Lightning
	Environmental test methods
401	Sand and dust
402	Corrosion
403	Humidity
404	Explosion proofness
405	Fluid resistance
406	Flammability
407	Temperature variation
	Mechanical test methods
501	Actuator button travel
502	Operating forces
503	Strength of actuating components
504	Strength of mounting elements
505	Strength of main terminals
506	Vibration performance
507	Mechanical shocks
508	Centrifugal acceleration
509	Insertion and extraction forces of signal contacts terminals
510	Strength of signal contact terminals
511	Combined test: temperature, altitude and vibration

Bibliography

- [1] EN 3841,* *Aerospace series — Circuit breakers — Test methods*

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* All parts quoted in this document.