SLOVENSKI STANDARD
oSIST prEN 3774-004:2021

01-september-2021

Aeronavtika - Odklopniki, tripolni, temperaturno kompenzirani, nazivni tok od 1 A do 25 A - 004. del: UNC-navojni priključki - Standard za proizvod

Aerospace series - Circuit breakers, three-pole, temperature compensated, rated currents 1 A to 25 A - Part 004: UNC thread terminals - Product standard

Luft- und Raumfahrt - Schutzschalter, dreipolig, temperaturkompensiert, Nennströme von 1 A bis 25 A - Teil 004: UNC-Klemmengewind - Produktnorm

Série aérospatiale - Disjoncteurs tripolaires compensés en température, intensités nominales 1 A à 25 A - Partie 004 : Bornes à filetage UNC - Norme de produit

Ta slovenski standard je istoveten z: **prEN 3774-004**

ICS:

29.120.50	Varovalke in druga nadtokovna zaščita	Fuses and other overcurrent protection devices
49.060	Letalska in vesoljska električna oprema in sistemi	Aerospace electric equipment and systems

oSIST prEN 3774-004:2021 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 3774-004

July 2021

ICS 49.060

Will supersede EN 3774-004:2014

English Version

Aerospace series - Circuit breakers, three-pole, temperature compensated, rated currents 1 A to 25 A - Part 004: UNC thread terminals - Product standard

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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 3774-004:2021) 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-STAN, prior to its presentation to CEN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 3774-004:2014.

1 Scope

This document specifies the characteristics of three-pole circuit breakers, temperature compensated with a rated current from 1 A to 25 A, used in aircraft on-board circuits at a temperature between −55 °C and 125 °C for ratings ≤ 15 A and −55 °C to 90 °C for ratings > 15 A and at an altitude of 22 000 m max.

These circuit breakers are operated by a push-pull type single pushbutton (actuator), with delayed action "trip-free" tripping.

They will continue to function up to the short-circuit current.

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 2350, *Aerospace series — Circuit breakers — Technical specification*

EN 2996-001, *Aerospace series — Circuit breakers, three-pole, temperature compensated, rated current 1 A to 25 A — Part 001: Technical specification*

EN 3774-001:2014, *Aerospace series — Circuit breakers, three-pole, temperature compensated, rated currents 1 A to 25 A — Part 001: Technical specification*[1]

EN 3841-305, *Aerospace series — Circuit breakers — Test methods — Part 305: Short-circuit performance*

EN 6113, Aerospace *series — Circuit breaker, connecting and attachment hardware*[1]

TR 6083, *Aerospace series — Cut-outs for installation of electrical components*[2]

FED-STD-595B, *Colors used in Government Procurement*[3]

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 2350 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 Dimensions and mass

4.1 Dimensional characteristics

The circuit breakers do not have to correspond to the pictorial illustration, only the dimensions given shall be adhered to.

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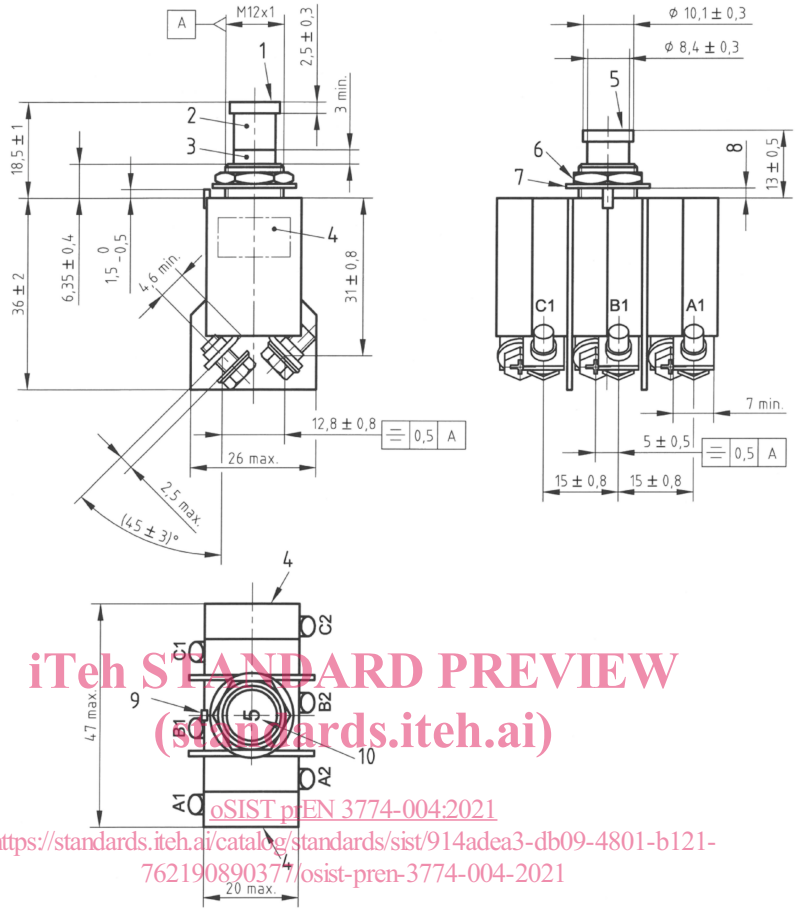
1 Published as ASD-STAN Standard at the date of publication of this document by AeroSpace and Defence industries Association of Europe — Standardization (ASD-STAN), http://www.asd-stan.org/.

2 Published as ASD-STAN Technical Report at the date of publication of this document by AeroSpace and Defence industries Association of Europe — Standardization (ASD-STAN), http://www.asd-stan.org/.

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

Dimensions are in millimetres with exception terminal thread 8-32 UNC.

See Figure 1.



Key

1	Push button released	6	Attachment nut
2	Black colour according to FED-STD 595B	7	Lock washer
3	White	8	1,0 max. to 3,0 max
4	Marking, see Clause 6	9	Positioning lug in accordance with the panel cut-out, as per TR 6083 C202
5	Push button pressed	10	Rated current marking (white on black)

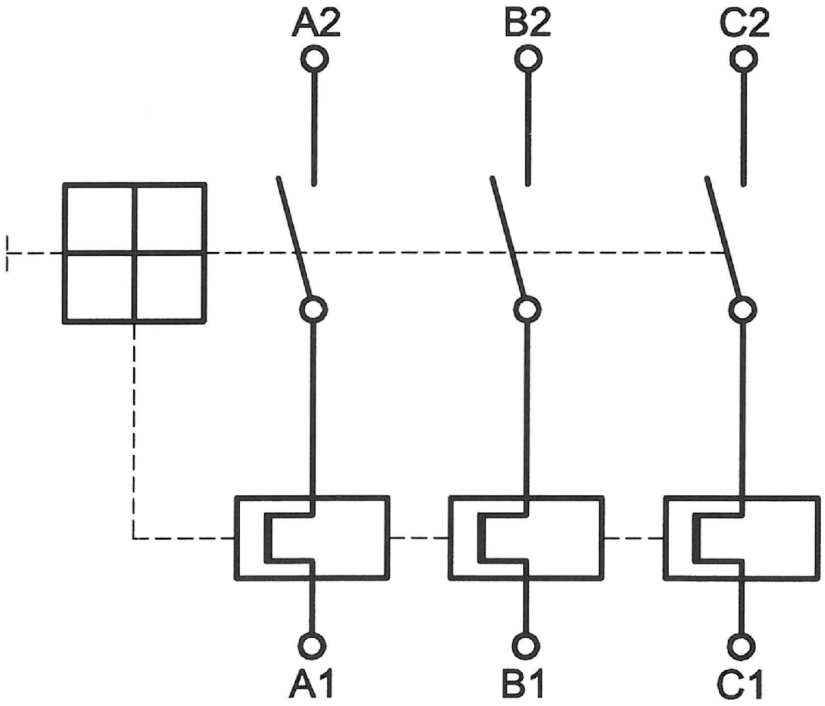
Figure 1 — Configuration – Dimensions – Tolerances

4.2 Electrical diagram

See Figure 2.

Push button released: CB open.

Push button pressed: CB closed.



Key

1 Supply
2 Load

Load and supply can be inverted.

Figure 2 — Electrical diagram

4.3 Mass

63 g max. (delivery code A including hardware).

4.4 Panel mounting

See EN 3774-001.

5 Characteristics

5.1 Material, surface treatment

See EN 2996-001.

5.2 Mechanical characteristics

5.2.1 Fasteners

See EN 6113.

5.2.2 Recommended tightening torque of attaching nut for installation

(4,75 ± 0,25) N.m.

5.2.3 Recommended tightening torque of connection hardware for installation

(1,6 ± 0,1) N.m.

5.2.4 Resistance to vibrations

5.2.4.1 Combined test: ambient temperature at 70 °C and vibrations

Sinusoidal : 10 g_n, see EN 3774-001.
Random : 5,8 g_n, see EN 3774-001
Low frequencies : 10 g_n, see EN 3774-001.

5.2.4.2 Combined test: ambient temperature at 85 °C, altitude and vibrations

Sinusoidal : 3 g_n, see EN 3774-001.

5.2.5 Resistance to shocks

50 g_n, see EN 3774-001.

5.2.6 Mechanical endurance

See Table 6.

5.3 Environment characteristics

5.3.1 Humidity

See EN 3774-001.

5.3.2 Corrosion

See EN 3774-001.

5.3.3 Contaminating liquids

See EN 3774-001.

5.3.4 Overvoltage caused by lightning

See EN 3774-001.

5.4 Electrical characteristics

5.4.1 Nominal voltage of operational circuits

See Table 1.

Table 1

Nominal voltage	115/200 V a.c., 400 Hz, three phase

5.4.2 Voltage drop at I_n and low current

See Table 2.

Table 2

Ratings A	**1**	**2**	**2,5**	**3**	**5**	**7,5**	**10**	**15**	**20**	**25**
***U* max. at I_n** **V**	1,1	0,75	0,70	0,55	0,35	0,30	0,30	0,25	0,25	0,20
***U* max. at *I* = 100 mA** **mV**	110	40	30	18	8	4	3	2,5	2,5	2,5
The test shall be performed when the contact is established (no switching).										

5.4.3 Minimum and maximum tripping thresholds

See Table 3.

Table 3

		Overload (in % of I_n)		
Ambient temperatures	**Ratings**	**Minimum thresholds value >** 1 h		**Maximum thresholds value** < 1 h
°C	A	On ground	At 22 000 m	On ground
23 ± 5	Al	110	105	140
−55 ± 5		115	105	160
70 ± 5		105	100	140
90 ± 5	20 and 25	90	80	140
125 ± 5	1 to 15	100	80	140

NOTE 1 For detection of minimum threshold, all the poles are connected in series.

NOTE 2 For detection of maximum threshold, load value is:

— increased by about 20 % when one pole is submitted to the load and other poles are not loaded;

— increased by about 10 % when two poles are submitted to the load and the other one is not loaded;

— not increased when the two other poles are loaded at 0,9 I_n.