SLOVENSKI STANDARD
SIST EN 3375-011:2023

01-marec-2023

Nadomešča:
SIST EN 3375-011:2017

Aeronavtika - Električni kabli za digitalni prenos podatkov - 011. del: Enojni oplet - Štirižilni zvezdasti kabel, 100 ohm - Lahki - Tip KL - Standard za proizvod

Aerospace series - Cable, electrical for digital data transmission - Part 011: Single braid - Star Quad 100 ohms - Lightweight - Type KL - Product standard

Luft- und Raumfahrt - Elektrische Leitungen für Digitaldatenübertragungen - Teil 011: Einfach geschirmt - Sternvierer 100 Ohm - Leichtbauweise - Typ KL - Produktnorm

Série aérospatiale - Câbles électriques pour transmission de données numériques - Partie 011 : Simple tresse - Quarte en étoile 100 ohms - Allégée - Type KL - Norme de produit

Ta slovenski standard je istoveten z: **EN 3375-011:2022**

ICS:

29.060.20	Kabli	Cables
49.060	Letalska in vesoljska električna oprema in sistemi	Aerospace electric equipment and systems

SIST EN 3375-011:2023 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 3375-011

December 2022

ICS 49.060; 49.090

Supersedes EN 3375-011:2017

English Version

Aerospace series - Cable, electrical for digital data transmission - Part 011: Single braid - Star Quad 100 ohms - Lightweight - Type KL - Product standard

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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 CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

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

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Ref. No. EN 3375-011:2022 E

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European foreword

This document (EN 3375-011:2022) 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-STAN, prior to its presentation to CEN.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2023, and conflicting national standards shall be withdrawn at the latest by June 2023.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 3375-011:2017.

The main changes with respect to the previous edition are listed in the following table.

Table 1 — Main changes to previous edition

prEN/EN number	Edition	Publication date	Modifications
EN 3375-011	1	01/2013	—
	2	11/2014	—
	3	12/2021	New proposal to revise the maximum weight of the product from 32 g/m to 32,4 g/m due to return of experience and design improvement on product revision to get better margin to kink effect at low bend radius.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this document: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

1 Scope

This document specifies the dimensions, tolerances, required characteristics and the mass of an AWG 24 shielded quad cable, type KL, intended for high speed (100 Mbit/s) full duplex Ethernet networks.

Linked to this particular application, the operating temperatures of the cable are between −65 °C and 125 °C.

This cable is laser markable, this marking satisfies the requirements of EN 3838.

The impedance is 100 Ω ± 15 Ω.

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 3375-001, *Aerospace series — Cable, electrical, for digital data transmission — Part 001: Technical specification)* [1]

EN 3475, *[*]Aerospace series — Cables, electrical, aircraft use — Test methods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 3475-100 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 Required characteristics

4.1 Configuration, dimension, tolerances and mass

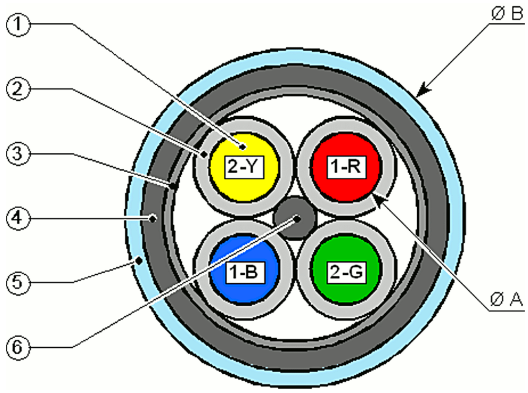
The configuration, dimensions and tolerances shall be in accordance with Figure 1 and Table 2.

Mass: ≤ 32,4 g/m.

[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), https://www.asd-stan.org/.

[*] All parts quoted in this document.

Dimensions are in millimetres



NOTE Nº of elements in accordance with Table 3.

Figure 1 — Configuration, dimensions and tolerances

Table 2 — Dimensions, tolerances and general characteristics

Stranded conductor (Ø *A*)	0,598 mm ≤ Ø ≤ 0,656 mm [a]
Insulation diameter (single wire)	Ø ≤ 1,52 mm [a]
Braid, shield	Strand diameter: ≥ 0,08 mm
Outer diameter of cable (Ø *B*)	4,10 mm < Ø < 4,50 mm
Colour of the jacket ⑤	Light blue
Colour of components ①	Pair 1: Red (+), Blue (−) Pair 2: Yellow (+), Green (−)
Minimum bending radius for dynamic installation	10 × Max. outer diameter
Minimum bending radius in static	5 × Max. outer diameter
[a] Adapted tools are requested for stripping.	

4.2 Material

The material and surface treatment shall be in accordance with Table 3.

Table 3 — Material

No. of element	Element	Material
①	Stranded conductor	Silver plated copper
②	Insulation	Fluoropolymer
③	Protection tape (optional)	Synthetic and/or metallic
④	Braid	Silver plated copper
⑤	Jacket	Fluoropolymer
⑥	Filler	Fluoropolymer

4.3 General characteristics

General characteristics shall be in accordance with Table 2.

5 Tests

Tests shall be in accordance with Table 4.

Maximum attenuation of the cable at 25 °C shall be in accordance with Table 5.

Minimum near end cross talk of the cable and contacts shall be in accordance with Table 6.

Transfer impedance shall be in accordance with Table 7.

Table 4 — Tests as per EN 3475 *(1 of 6)*

EN 3475-	Designation of the test	Carried out on/requirement	
		Component (samples from finished cable)	Cable
100	General	Not applicable	Applicable
201	Visual examination	Applicable	Applicable
202	Mass	Not applicable	Applicable, see 4.1.
203	Dimensions	Applicable	Applicable, see Table 2.
301	Ohmic resistance per unit length	Not applicable	Applicable Maximum electrical loop resistance 192 Ω/km
302	Voltage proof test	Not applicable	Applicable Conductor/Conductor Conductors/Shield DC: 1 kV (1 min) or 2,5 kV (2 s) AC: 700 V (1 min) or 1,7 kV (2 s)
303	Insulation resistance	Not applicable	Applicable ≥ 1 500 MΩ.km at 20 °C
304	Surface resistance	Applicable 1 250 MΩ.mm	Applicable 1 250 MΩ.mm
305	Overload resistance	Not applicable	Not applicable
306	Continuity of conductors	Applicable	Applicable
307	Corona extinction voltage	Not applicable	Not applicable

Table 4 — Tests as per EN 3475 *(2 of 6)*

EN 3475-	Designation of the test	Carried out on/requirement	
		Component (samples from finished cable)	Cable
401	Accelerated ageing	Not applicable	Applicable T = (155 ± 5) °C, 168 h Mandrel Ø = 45 mm Load = 0,7 daN
402	Shrinkage and delamination	Applicable T = (125 ± 5) °C Shrinking of the insulation = 0,8 mm max.	Applicable T = (125 ± 5) °C Shrinking of the jacket = 5 mm max.
403	Delamination and blocking	Applicable T = (125 ± 5) °C Mandrel Ø = 20 mm	Applicable T = (125 ± 5) °C Mandrel Ø = 45 mm
404	Thermal shock	Applicable 30 min at (125 ± 5) °C 30 min at (−65 ± 3) °C 30 min at (20 ± 3) °C Shrinking of the insulation = 0,8 mm max.	Applicable 30 min at (125 ± 5) °C 30 min at (−65 ± 3) °C 30 min at (20 ± 3) °C Shrinking of the jacket = 5 mm max.
405	Bending at ambient temperature	Not applicable	Applicable Mandrel Ø = 45 mm Load = 0,7 daN
406	Cold bend test	Not applicable	Applicable T = (−65 ± 3) °C Mandrel Ø = 45 mm Load = 0,7 daN
407	Flammability	Not applicable	Applicable Load = 1 daN
408	Fire resistance	Not applicable	Not applicable
409	Air-excluded ageing	Not applicable	Not applicable

Table 4 — Tests as per EN 3475 *(3 of 6)*

EN 3475-	Designation of the test	Carried out on/requirement	
		Component (samples from finished cable)	Cable
410	Thermal endurance	Not applicable	Not applicable
411	Resistance to fluids	Not applicable	Applicable
412	Humidity resistance	Not applicable	Not applicable
413	Wrap back test	Not applicable	Not applicable
414	Differential scanning calorimeter (DSC test)	Not applicable	Not applicable
415	Rapid change of temperature	Not applicable	Not applicable
416	Thermal stability	Not applicable	Not applicable
417	Fire resistance of cables confined inside a harness	Not applicable	Not applicable
418	Thermal endurance for conductors	Not applicable	Not applicable
501	Dynamic cut-through	Not applicable	Applicable At (20 ± 5) °C: > 1 daN At operating temperature: ≥ 0,5 daN
502	Notch propagation	Not applicable	Applicable Notch depth = 0,05 mm Mandrel Ø = 45 mm
503	Scrape abrasion	Not applicable	Applicable at (20 ± 5) °C F = 1 daN
504	Torsion	Not applicable	Not applicable
505	Tensile test on conductors and strands	Applicable Tensile strength ≥ 45 N and A % ≥ 10	On whole braid: Tensile strength ≥ 20 daN