



SLOVENSKI STANDARD
oSIST prEN 3375-011:2021
01-maj-2021

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 - Light weight - 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 étoile 100 ohms - Allégée - Type KL - Norme de produit

<https://standards.iteh.ai/catalog/standards/sist/346f8341-33fc-46d4-b496-b541b2307ced/osist-pren-3375-011-2021>

Ta slovenski standard je istoveten z: prEN 3375-011

ICS:

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

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en,fr,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 3375-011

February 2021

ICS 49.060; 49.090

Will supersede EN 3375-011:2017

English Version

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

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

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

This draft European Standard is submitted to CEN members for second 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 3375-011:2021) 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 standard 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 second Enquiry.

This document will supersede EN 3375-011:2017.

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prEN 3375-011:2021 (E)**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 $-65\text{ }^{\circ}\text{C}$ and $125\text{ }^{\circ}\text{C}$.

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

The characteristics impedance are $100\ \Omega \pm 15\ \Omega$.

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 3375-002, *Aerospace series — Cable, electrical, for digital data transmission — Part 002: General*

EN 3475 (series), *Aerospace series — Cable, electrical, aircraft use — Test methods*²⁾

EN 3838, *Aerospace series — Requirements and tests on user-applied markings on aircraft electrical cables*

TR 6058, *Aerospace series — Cable code identification list*³⁾

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 <http://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

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) All parts quoted in this document.

3) Published as ASD-STAN Technical Report at the date of publication of this standard by AeroSpace and Defence industries Association of Europe — Standardization (ASD-STAN) (www.asd-stan.org)

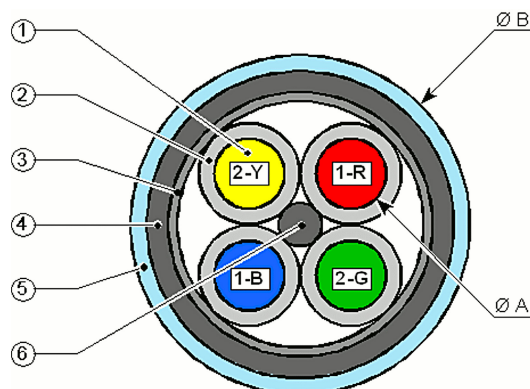
4 Required characteristics

4.1 Configuration, dimensions, tolerances and mass

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

Mass: $\leq 32,4$ g/m.

Dimensions are in millimetres



NOTE No. of elements in accordance with Table 2.

Figure 1 — Configuration, dimensions and tolerances

Table 1 — Dimensions, tolerances and general characteristics

Stranded conductor (ØA)	$0,598 \text{ mm} \leq \varnothing \leq 0,656 \text{ mm}^a$
Insulation diameter (single wire)	$\varnothing \leq 1,52 \text{ mm}^a$
Braid, shield	Strand diameter: $\geq 0,08 \text{ mm}$
Outer diameter of cable (ØB)	$4,10 \text{ mm} < \varnothing < 4,50 \text{ mm}$
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	$10 \times \text{Max. outer diameter}$
Minimum bending radius in static	$5 \times \text{Max. outer diameter}$
^a Adapted tools are requested for stripping.	

prEN 3375-011:2021 (E)**4.2 Material**

The material and surface treatment shall be in accordance with Table 2.

Table 2 — Material

No. of element	Element	Material
①	Stranded conductor	Silver plated copper
②	Insulation	Fluoropolymer
③	Protection tape	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 1.

5 Test

Tests shall be in accordance with Table 3.

Maximum attenuation of the cable at 25 °C shall be in accordance with Table 4.

Minimum near end cross talk of the cable and contacts shall be in accordance with Table 5.

Transfer impedance shall be in accordance with Table 6.

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Table 3 — Tests as per EN 3475

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 1.
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 $\geq 1\ 500\ \text{M}\Omega\cdot\text{km}$ at 20 °C
304	Surface resistance	Applicable 1 250 $\text{M}\Omega\cdot\text{mm}$	Applicable 1 250 $\text{M}\Omega\cdot\text{mm}$
305	Overload resistance	Not applicable	Not applicable
306	Continuity of conductors	Applicable	Applicable
307	Corona extinction voltage	Not applicable	Not applicable
401	Accelerated ageing	Not applicable	Applicable $T\text{ }^\circ\text{C} = (155 \pm 5)\text{ }^\circ\text{C}$, 168 h Mandrel $\varnothing = 45\ \text{mm}$ Load = 0,7 daN
402	Shrinkage and delamination	Applicable $T\text{ }^\circ\text{C} = (125 \pm 5)\text{ }^\circ\text{C}$. Shrinking of the insulation = 0,8 mm max.	Applicable $T\text{ }^\circ\text{C} = (125 \pm 5)\text{ }^\circ\text{C}$. Shrinking of the jacket = 5 mm max.
403	Delamination and blocking	Applicable $T\text{ }^\circ\text{C} = (125 \pm 5)\text{ }^\circ\text{C}$. Mandrel $\varnothing = 20\ \text{mm}$	Applicable $T\text{ }^\circ\text{C} = (125 \pm 5)\text{ }^\circ\text{C}$. Mandrel $\varnothing = 45\ \text{mm}$
404	Thermal shock	Applicable 30 min at $(125 \pm 5)\text{ }^\circ\text{C}$ 30 min at $(-65 \pm 3)\text{ }^\circ\text{C}$ 30 min at $(20 \pm 3)\text{ }^\circ\text{C}$ Shrinking of the insulation = 0,8 mm max.	Applicable 30 min at $(125 \pm 5)\text{ }^\circ\text{C}$ 30 min at $(-65 \pm 3)\text{ }^\circ\text{C}$ 30 min at $(20 \pm 3)\text{ }^\circ\text{C}$ Shrinking of the jacket = 5 mm max.
405	Bending at ambient temperature	Not applicable	Applicable Mandrel $\varnothing = 45\ \text{mm}$ Load = 0,7 daN

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EN 3475-	Designation of the test	Carried out on/Requirement	
		Component (samples from finished cable)	Cable
406	Cold bend test	Not applicable	Applicable $T^{\circ}\text{C} = (-65 \pm 3)^{\circ}\text{C}$ Mandrel $\varnothing = 45 \text{ mm}$ 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
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 $(20 \pm 5)^{\circ}\text{C}$: $> 1 \text{ daN}$ At operating temperature: $\geq 0,5 \text{ daN}$
502	Notch propagation	Not applicable	Applicable Notch depth = 0,05 mm Mandrel $\varnothing = 45 \text{ mm}$
503	Scrape abrasion	Not applicable	Applicable at $(20 \pm 5)^{\circ}\text{C}$ $F = 1 \text{ daN}$
504	Torsion	Not applicable	Not applicable
505	Tensile test on conductors and strands	Applicable Tensile strength $\geq 45 \text{ N}$ and $A \% \geq 10$	On whole braid: Tensile strength $\geq 20 \text{ daN}$
506	Plating continuity	Applicable	Applicable
507	Adherence of plating	Applicable	Applicable
508	Plating thickness	Applicable ^a	Applicable ^a
509	Solderability	Not applicable	Not applicable
510	Tensile strength and elongation of extruded insulation, sheath and jacket materials	Not applicable	Not applicable
511	Cable-to-cable abrasion	Not applicable	Not applicable
512	Flexure endurance	Not applicable	Not applicable