SVENSK STANDARD SS-EN 50516-2-1

Fastställd	Utgåva	Sida	Ansvarig kommitté
2012-03-14	1	1 (1+40)	SEK TK 86

Anslutningsdon för fiberoptik för styr- och kommunikationssystem – Specifikationer – Del 2-1: Typ ODVA PC för industribruk på multimodfiber EN 60793-2-10 kategori A1a och A1b för att möta fordringarna i kategori I (industrimiljö) enligt EN 50173-1 och IEC 61753-1-3

Industrial connector sets and interconnect components to be used in optical fibre control and communication systems – Product specifications – Part 2-1: Type ODVA PC industrial terminated on EN 60793-2-10 category A1a and A1b multimode fibre to meet the requirements of category I (industrial environments) as specified in EN 50173-1 and IEC 61753-1-3

Som svensk standard gäller europastandarden EN 50516-2-1:2011. Den svenska standarden innehåller den officiella engelska språkversionen av EN 50516-2-1:2011.

ICS 33.180.20

Denna standard är fastställd av SEK Svensk Elstandard,
som också kan lämna upplysningar om **sakinnehållet** i standarden.
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Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50516-2-1

November 2011

ICS 33.180.20

English version

Industrial connector sets and interconnect components to be used in optical fibre control and communication systems - Product specifications - Part 2-1: Type ODVA PC industrial terminated on EN 60793-2-10 category A1a and A1b multimode fibre to meet the requirements of category I (industrial environments) as specified in EN 50173-1 and IEC 61753-1-3

Industrie-Steckverbindersätze und Verbindungsbauelemente für Lichtwellenleiter-Steuerungs- und Datenübertragungssysteme - Produktnormen - Teil 2-1: Industriesteckverbinder der Bauart ODVA-PC zum Anschluss an Mehrmodenfasern der Typen A1a und A1b nach EN 60793-2-10 für die Kategorie I (Industrieumgebung) nach den Festlegungen in EN 50173-1 und IEC 61753-1-3

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 50516-2-1:2011 E

SEK Svensk Elstandard

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Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 86BXA, Fibre optic interconnect, passive and connectorised components. The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50516-2-1 on 2011-07-19.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2012-07-19
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2014-07-19

CENELEC draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning ODVA industrial connectors (see declaration in Annex F).

All potential patent issues concerning this product are covered by IEC patent statement (see EN 61754-24-21).

Introduction

CENELEC draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning ODVA industrial connectors given in Annex F.

CENELEC takes no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured CENELEC that he/she is willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with CENELEC.

Information may be obtained from:

The Siemon Company
101 Siemon Company Drive
Watertown, CT 06795

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights other than those identified above. CENELEC shall not be held responsible for identifying any or all such patent rights.

Industrial connector sets and interconnect components to be used in optical fibre control and communication systems – Product specifications

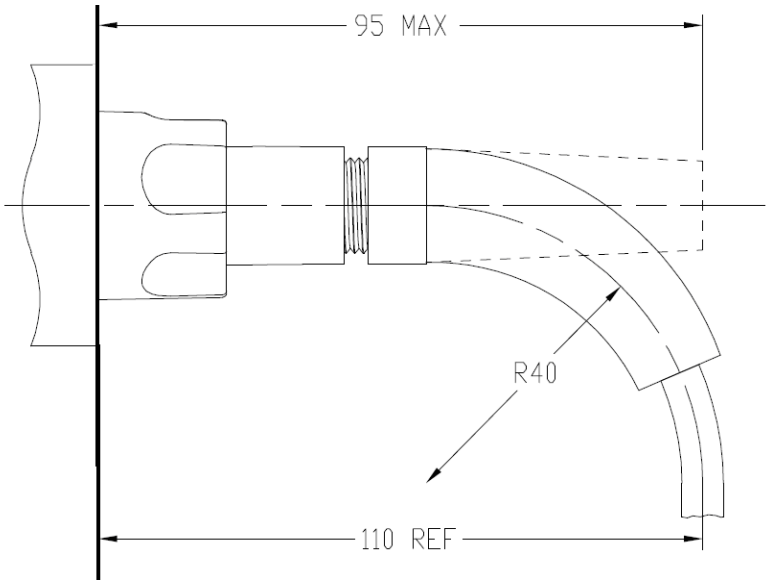
Part 2-1: Type ODVA PC industrial terminated on EN 60793-2-10 category A1a and A1b multimode fibre to meet the requirements of category I (industrial environments) as specified in EN 50173-1 and IEC 61753-1-3

Description		Performance	
Coupling mechanism:	Twist and lock with sealing	Application:	For the use in category I (industrial environment)
Configuration:	Plug / adaptor / with one side of the configuration having a seal and a protective shell	Attenuation (random mate):	Bm Mean ≤ 0,35 dB and ≤ 0,60 dB for ≥ 97 % of measurements
Fibre category:	EN 60793-2-10 Type A1a		
Cable type:	See Table 3	Return loss:	2m ≥ 20 dB

Related documents:

EN 50173-1	Information technology – Generic cabling systems – Part 1: General requirements
EN 50173-3	Information technology – Generic cabling systems – Part 3: Industrial premises
EN 60529	Degrees of protection provided by enclosures (IP Code) (IEC 60529)
EN 60794-3	Optical fibre cables – Part 3: Sectional specification – Outdoor cables (IEC 60794-3)
EN 61300 series	Fibre optic interconnecting devices and passive components – Basic test and measurement procedures (IEC 61300 series)
EN 61753-1	Fibre optic interconnecting devices and passive components performance standard – Part 1: General and guidance for performance standards (IEC 61753-1)
EN 61754-20	Fibre optic connector interfaces – Part 20: Type LC connector family (IEC 61754-20)
IEC 61753-1-3 [1)]	Fibre optic interconnecting devices and passive components – Performance standard – Part 1-3: General and guidance for single-mode fibre optic connector performance for harsh industrial operating conditions

Outline and maximum dimensions: ODVA connector plug with protective shell in sealed adaptor.



[1)] At draft stage.

1 Scope

1.1 Product definition

This European Standard contains the initial, start of life dimensional, optical, mechanical and environmental performance requirements that an ODVA connector terminated with cylindrical zirconia PC ferrules with one side protected by an industrial housing, an adaptor fitted with resilient alignment sleeve and patchcord shall meet in order for it to be categorised as an EN standard product. The product is rated IP67.

Since different variants are permitted, product marking details are given in 3.6.

1.2 Intermateability

Products conforming to the requirements of this specification will intermate and give the specified level of random attenuation and random return loss performance, provided that the same fibre type is used. The intention is that this will be true irrespective of the manufacturing source(s) of the product.

1.3 Operating environment

The tests selected combined with the severities and durations, specified as Category I, are intended to reflect, although they do not necessarily satisfy all the requirements of the boundary conditions of $M_3I_3C_3E_3$.

1.4 Reliability

Whilst the anticipated service life expectancy of the product in this environment is 20 years, compliance with this specification does not guarantee the reliability of the product. This should be predicted using a recognised reliability assessment programme.

1.5 Quality assurance

Compliance with this specification does not guarantee the manufacturing consistency of the product. This should be maintained using a recognised quality assurance programme.

2 Normative references

The following referenced documents are indispensable for the application 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 60068-2-60	Environmental testing – Part 2: Tests – Test Ke: Flowing mixed gas corrosion test (IEC 60068-2-60)
EN 60529	Degrees of protection provided by enclosures (IP Code) (IEC 60529)
EN 60874-1	Connectors for optical fibres and cables – Generic specification (IEC 60874-1)
EN 61280-1-4	Fibre optic communication subsystem test procedures – Part 1-4: General communication subsystems – Light source encircled flux measurement method (IEC 61280-1-4)
EN 61300-1	Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 1: General and guidance (IEC 61300-1)
EN 61300-2-1	Part 2-1: Tests – Vibration (sinusoidal) (IEC 61300-2-1)
EN 61300-2-2	Part 2-2: Tests – Mating durability (IEC 61300-2-2)
EN 61300-2-4	Part 2-4: Tests – Fibre/cable retention (IEC 61300-2-4)
EN 61300-2-5	Part 2-5: Tests – Torsion (IEC 61300-2-5)

EN 61300-2-6	Part 2-6: Tests – Tensile strength of coupling mechanism (IEC 61300-2-6)
EN 61300-2-7	Part 2-7: Tests – Bending moment (IEC 61300-2-7)
EN 61300-2-9	Part 2-9: Tests – Shock (IEC 61300-2-9)
EN 61300-2-10	Part 2-10: Tests – Crush resistance (IEC 61300-2-10)
EN 61300-2-12	Part 2-12: Tests – Impact (IEC 61300-2-12)
EN 61300-2-22	Part 2-22: Tests – Change of temperature (IEC 61300-2-22)
EN 61300-2-26	Part 2-26: Tests – Salt mist (IEC 61300-2-26)
EN 61300-2-27	Part 2-27: Tests – Dust – Laminar flow (IEC 61300-2-27)
EN 61300-2-34	Part 2-34: Tests – Resistance to solvents and contaminating fluids of interconnecting components and closures (IEC 61300-2-34)
EN 61300-2-35	Part 2-35: Tests – Cable nutation (IEC 61300-2-35)
EN 61300-2-46	Part 2-46: Tests – Damp heat cyclic (IEC 61300-2-46)
EN 61300-3-1	Part 3-1: Examinations and measurements – Visual examination (IEC 61300-3-1)
EN 61300-3-6	Part 3-6: Examinations and measurements – Return loss (IEC 61300-3-6)
EN 61300-3-15	Part 3-15: Examinations and measurements – Dome eccentricity of a convex polished ferrule endface (IEC 61300-3-15)
EN 61300-3-16	Part 3-16: Examinations and measurements – Endface radius of spherically polished ferrules (IEC 61300-3-16)
EN 61300-3-23	Part 3-23: Examination and measurements – Fibre position relative to ferrule endface (IEC 61300-3-23)
EN 61300-3-28	Part 3-28: Examinations and measurements – Transient loss (IEC 61300-3-28)
EN 61300-3-34	Part 3-34: Examinations and measurements – Attenuation of random mated connectors (IEC 61300-3-34)
EN 61300-3-35	Part 3-35: Examinations and measurements – Fibre optic connector endface visual and automated inspection (IEC 61300-3-35)
EN 61754-20	Fibre optic connector interfaces – Part 20: Type LC connector family (IEC 61754-20)