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Standards

Irish Standard  
I.S. EN 50516-1-1:2011

Industrial connector sets and interconnect components to be used in optical fibre control and communication systems - Product specifications -- Part 1-1: Type SC-RJ 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 IEC 61753-1-3

## I.S. EN 50516-1-1:2011

*Incorporating amendments/corrigenda issued since publication:*

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EUROPEAN STANDARD

**EN 50516-1-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

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 1-1: Type SC-RJ 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 IEC 61753-1-3**

Jeux de connecteurs industriels et composants d'interconnexion à utiliser dans les systèmes de communication et de commande par fibres optiques -  
Spécifications de produit -  
Partie 1 1: Type SC RJ PC industriel câblés sur fibre multimodale des catégories A1a et A1b de la norme EN 60793-2-10 pour satisfaire aux exigences de la catégorie I (environnements industriels) comme cela est spécifié dans la CEI 61753-1-3

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

This European Standard was approved by CENELEC on 2011-07-19. CENELEC 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.

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**CENELEC**

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

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

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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 50516-1-1 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 SC-RJ 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).

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## **Introduction**

CENELEC draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning Fiber Optic Connector Interface - SC-RJ Industrial 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:

Reichle & De-Massari AG  
Binzstrasse 31  
CH - 8622 Wetzikon ZH  
Switzerland

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.

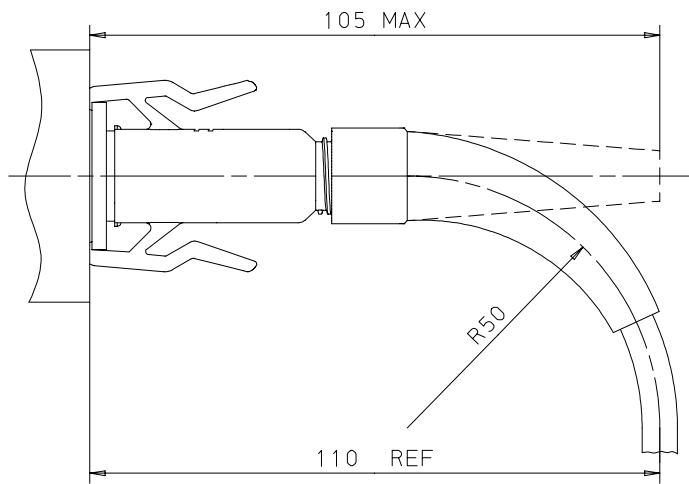
<b>Industrial connector sets and interconnect components to be used in optical fibre control and communication systems – Product specifications</b>			
<b>Part 1-1: Type SC-RJ PC industrial terminated on EN 60793-2-10 category A1a and A1b multimode fibre to meet the requirements of category I (industrial environments) as specified in IEC 61753-1-3</b>			
<b>Description</b>		<b>Performance</b>	
Coupling mechanism:	Latched with sealing	Application:	For the use in category I (industrial environment)
Configuration:	Plug / adaptor / plug with one side of the configuration having a protective shell	Attenuation (random mate):	Grade Bm Mean $\leq 0,35$ dB and $\leq 0,60$ dB for $\geq 97$ % of measurements
Fibre category:	EN 60793-2-10 Types A1a and A1b		
Cable type:	See Table 3	Return loss:	Grade 2m $\geq 20$ dB
<b>Related documents:</b>			
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 61076-3-106	Connectors for electronic equipment – Product requirements – Part 3-106: Rectangular connectors – Detail specification for protective housings for use with 8-way shielded and unshielded connectors for industrial environments incorporating the IEC 60603-7 series interface (IEC 61076-3-106)		
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 61754-24	Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 24: Type SC-RJ connector family (IEC 61754-24)		
IEC 61753-1-3 <sup>1)</sup>	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		

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1) At draft stage.



**Outline and maximum dimensions of plug with protective shell:**



## 1 Scope

### 1.1 Product definition

This European Standard contains the initial, start of life dimensional, optical, mechanical and environmental performance requirements that an SC-RJ connector set with one side protected by an industrial housing with the fibres terminated with cylindrical zirconia PC ferrules, an adaptor fitted with resilient alignment sleeves 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<sub>3</sub>I<sub>3</sub>C<sub>3</sub>E<sub>3</sub>.

### 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 50377-6-1	Connector sets and interconnect components to be used in optical fibre communication systems – Product specifications – Part 6-1: Type SC-RJ terminated on IEC 60793-2 category A1a and A1b multimode fibre
EN 50377-6-2	Connector sets and interconnect components to be used in optical fibre communication systems – Product specifications – Part 6-2: SC-RJ single mode terminated on IEC 60793-2-50 category B1.1 and B1.3 singlemode fibre, category U
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 60793-2-10	Optical fibres – Part 2-10: Product specifications – Sectional specification for category A1 multimode fibres (IEC 60793-2-10)
EN 60874-1	Connectors for optical fibres and cables – Part 1: Generic specification (IEC 60874-1)
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)

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