
**Konektorski sestavi in povezovalne komponente za uporabo v
komunikacijskih sistemih z optičnimi vlakni – Specifikacije izdelka – 6-2. del:
Tip SC-RJ, zaključen na enorodnem vlaknu kategorije B1.1 po IEC 60793-2**

Connector sets and interconnect components to be used in optical fibre
communication systems - Product specifications - Part 6-2: Type SC-RJ terminated
on IEC 60793-2 category B1.1 singlemode fibre

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**Connector sets and interconnect components
to be used in optical fibre communication systems -
Product specifications
Part 6-2: Type SC-RJ terminated on IEC 60793-2
category B1.1 singlemode fibre**

Jeux de connecteurs et composants
d'interconnexion à utiliser
dans les systèmes de communication
par fibres optiques -
Spécifications de produit
Partie 6-2: Type SC-RJ câblé
sur une fibre unimodale
de la catégorie B1.1 de la CEI 60793-2

Steckverbindersätze
und Verbindungselemente
für Lichtwellenleiter-
Datenübertragungssysteme
Teil 6-2: Bauart SC-RJ/PC zum Anschluss
an Einmodenfasern des Typs B1.1 Faser
nach IEC 60793-2

<https://standards.iteh.ai/catalog/standards/sist/76dcb09f-e161-4938-b932-86029f06ccc6/sist-en-50377-6-2-2005>

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CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 86BXA, Fibre optic connectors.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50377-6-2 on 2004-03-01.

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) 2005-03-01
 - latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2007-03-01
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Connector sets and interconnect components to be used in optical fibre communication systems – Product specifications

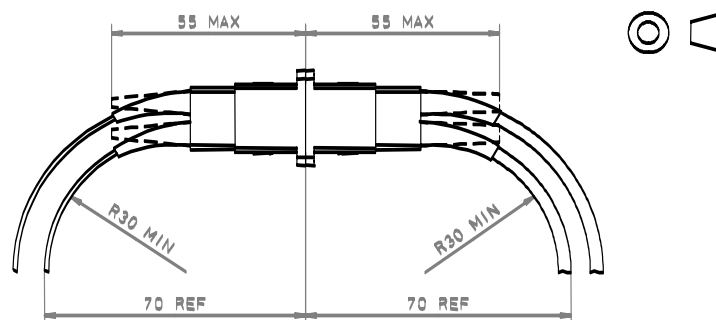
Part: 6-2: Type: SC-RJ/PC terminated on IEC 60793-2-50 category B1.1 fibre

Description		Performance	
Coupling mechanism:	push-pull	Application:	IEC 61753-2-1 Category U and ES 200 671 environments (see 1.3)
Configuration:	plug / adaptor / plug	Attenuation grades:	P: mean $\leq 0,35$ dB $\leq 1,0$ dB for ≥ 97 % of measurements Q: mean $\leq 0,30$ dB $\leq 0,6$ dB for ≥ 99 % of measurements
Fibre category:	IEC 60793-2-50 type B1.1	Return loss grades:	S: ≥ 26 dB T: ≥ 35 dB R: ≥ 40 dB W: ≥ 45 dB U: ≥ 50 dB
Cable type	see Table 3		

Related documents:

EN 50173	Information technology – Generic cabling systems
EN 61300 series	Fibre optic interconnecting devices and passive components – Basic test and measurement procedures
EN 61753-2-1	Fibre optic interconnecting devices and passive components performance standard – Part 2-1: Fibre optic connectors terminated on single-mode fibre for category U – Uncontrolled environment
EN 61754-4	Fibre optic connector interfaces – Part 4: Type SC connector family
EN 60793-2-50	Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres
EN 60794-2	Optical fibre cables – Part 2: Indoor cables – Sectional specification
EN 186000-1	Generic specification: Connector sets for optical fibres and cables – Part 1: Requirements, test methods and qualification approval procedures
ES 200 671	Transmission and Multiplexing (TM) - Passive optical components - Optical fibre connectors for single-mode optical fibre communication systems - Common requirements and conformance testing
ETS 300 019 series	Equipment engineering (EE) - Environmental conditions and environmental tests for telecommunications equipment
ISO/IEC 11801	Information technology – Generic cabling for customer premises

Outline and maximum dimensions:



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1 Scope

1.1 Product definition

This European Standard contains the initial, start of life dimensional, optical, mechanical and environmental performance requirements which terminated and assembled single-mode resilient alignment sleeve SC-RJ connector set (plug / adaptor / plug) must meet in order for it to be categorised as an EN standard product.

Product marking details are given in 3.5.

1.2 Intermateability

Although all products conforming to the requirements of this specification will intermate, the resulting level of random attenuation performance will only be ensured in accordance with Table 1. The intention is that this will be true irrespective of the manufacturing source(s) of the product.

In all cases, the intermating of plug variants having different attenuation grades will result in an uncertain level of random attenuation performance.

Table 1 - Ensured level of random attenuation

Plug variant / attenuation grade	P	Q
P	P	
Q		Q

Similarly, when intermating plug variants having different return loss classes, the resulting level of return loss cannot be assured to be any better than the worst return loss class.

A simplex SC plug can be connected in the SC-RJ adaptor without degrading its level of performance.

1.3 Operating environment

The tests selected combined with the severities and durations are representative of an external weather protected environment defined by

- EN 61753-2-1 Category U - Uncontrolled environment, and
- ES 200 671 External weather protected environment defined by ETS 300 019 series, class 3.3, 3.4 and 3.5.

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 50173 Information technology – Generic cabling systems

EN 60793-2-50	Optical fibres – Part 2-50: Product specifications – Sectional specification for class B single-mode fibres
EN 61300 series	Fibre optic interconnecting devices and passive components – Basic test and measurement procedures
EN 61300-2-1	Part 2-1: Tests – Vibration (sinusoidal)
EN 61300-2-2	Part 2-2: Tests – Mating durability
EN 61300-2-4	Part 2-4: Tests – Fibre/cable retention
EN 61300-2-5	Part 2-5: Tests – Torsion/twist
EN 61300-2-6	Part 2-6: Tests – Tensile strength of coupling mechanism
EN 61300-2-7	Part 2-7: Tests – Bending moment
EN 61300-2-12	Part 2-12: Tests – Impact
EN 61300-2-17	Part 2-17: Tests – Cold
EN 61300-2-18	Part 2-18: Tests – Dry heat – High temperature endurance
EN 61300-2-19	Part 2-19: Tests – Damp heat (steady state)
EN 61300-2-22	Part 2-22: Tests – Change of temperature
EN 61300-2-26	Part 2-26: Tests – Salt mist
EN 61300-2-27	Part 2-27: Tests – Dust – Laminar flow
EN 61300-2-42	Part 2-42: Tests – Static side load for connectors
EN 61300-3-4	Part 3-4: Examinations and measurements – Attenuation
EN 61300-3-6	Part 3-6: Examinations and measurements – Return loss
EN 61300-3-34	Part 3-34: Examinations and measurements – Attenuation of random mated connectors
EN 61753-2-1	Fibre optic interconnecting devices and passive components performance standard – Part 2-1: Fibre optic connectors terminated on single-mode fibre for category U – Uncontrolled environment
EN 61754-4	Fibre optic connector interfaces – Part 4: Type SC connector family
EN 186000-1	Generic Specification: Connector sets for optical fibres and cables – Part 1: Requirements, test methods and qualification approval procedures
ES 200 671	Transmission and Multiplexing (TM) - Passive optical components - Optical fibre connectors for single-mode optical fibre communication systems - Common requirements and conformance testing
ETS 300 019 series	Equipment engineering (EE) - Environmental conditions and environmental tests for telecommunications equipment
IEC 61300-2-46 ¹⁾	Fibre optic interconnecting devices and passive components – Basic test and measurement procedures Part 2-46: Tests – Damp heat cyclic
ISO/IEC 11801	Information technology – Generic cabling for customer premises

¹⁾ At draft stage.

3 Description

The SC-RJ connector is a duplex plug connector set of plug / adaptor / plug configuration characterised by two cylindrical, spring loaded butting ferrule of 2,5 mm nominal diameter and a push-pull coupling mechanism. The optical alignment mechanism of the connector is of a resilient sleeve style.

3.1 SC-RJ plug

The plug features two cylindrical zirconia ceramic ferrules and a push-pull coupling mechanisms. Alternative materials may be used for the ferrule that have directly compatible material properties as zirconia, but the endface and performance requirements must be met under all conditions.

The plug housing has a single male key which is used to limit the relative rotation between mated plugs.

A cover (dust cap) to protect the ferrule endface when the plug is in the unmated condition is provided.

3.2 SC-RJ adaptor

The adaptor consists of two zirconia ceramic resilient alignment sleeves and two push-pull coupling mechanisms, one for each sleeve. Alternative materials may be used for the sleeve that have directly compatible material properties as zirconia.

The mounting style is a rectangular flange with 2 hole fixing.

The adaptor can either connect to a SC-RJ plug or to two simplex SC plugs according to EN 61754-4. The adaptor housing has three female keys which are used to limit the relative rotation between mated plugs. One key is used to position the SC-RJ plug and the other two keys are used to orientate the two simplex SC plugs.

Covers (dust caps) are provided to protect each duplex port of the adaptor.

3.3 Materials

Materials which are not specified or which are not specifically described are left to the discretion of the manufacturer.

3.4 Dimensions

Outline dimensions and other dimensions necessary to ensure intermateability or which affect performance are specified. All other dimensions are left to the discretion of the manufacturer. Where the mating face limit dimensions are not in agreement with an IEC Interface Standard this is clearly stated.

3.5 Colour and marking

Marking of the product shall be in accordance with 2.6.2 of EN 186000-1 in the following order of precedence:

- identification of manufacturer;
- manufacturing date code: year / week;
- manufacturers part number;
- variant identification number.

The preferred colour scheme is given in Table 2.

Table 2 – Preferred colour scheme

Delatch housing simplex SC plug	Delatch housing SC-RJ plug	Adaptor
Blue	Blue	Blue

NOTE The preferred blue is RAL 5015.

4 Variants

4.1 Terminated plug

The following fibre/cable variants are given in Table 3.

Table 3 - Plug variants

Variant number	Fibre/cable mm	Structure	Note
P01	Ø 0,7 - 1,4	Buffered fibre	1 fibre
P02	Ø 1,8 ± 0,2	Reinforced cable	1 fibre
P03	Ø 2,0 ± 0,2	Reinforced cable	1 fibre
P04	Ø 2,5 ± 0,2	Reinforced cable	1 fibre
P05	Ø 2,8 ± 0,2	Reinforced cable	1 fibre
P06	Ø 3,0 ± 0,2	Reinforced cable	1 fibre
P07	Ø 3,2 ± 0,2	Reinforced cable	1 fibre
P08	2,7 * 5,4	Reinforced twin zip cable	2 fibres
Q01	Ø 0,7 - 1,4	Buffered fibre	1 fibre
Q02	Ø 1,8 ± 0,2	Reinforced cable	1 fibre
Q03	Ø 2,0 ± 0,2	Reinforced cable	1 fibre
Q04	Ø 2,5 ± 0,2	Reinforced cable	1 fibre
Q05	Ø 2,8 ± 0,2	Reinforced cable	1 fibre
Q06	Ø 3,0 ± 0,2	Reinforced cable	1 fibre
Q07	Ø 3,2 ± 0,2	Reinforced cable	1 fibre
Q08	2,7 * 5,4	Reinforced twin zip cable	2 fibres

4.2 Adaptor

The defined adaptor variants are given in Table 4.

Table 4 – Adaptor variants

Variant number	Format
C01	Rectangular flange – Duplex

4.3 Identification of variants

The identification numbers for the fibre/cable variants and adaptor variants with fibre category IEC 60793-2-50 are given in Tables 5, 6 and 7.

Table 5 – P grade plugs

Variant number	Performance class (Return loss)	Identification number
P01	S	EN50377-6-2-P01-S
P01	T	EN50377-6-2-P01-T
P01	R	EN50377-6-2-P01-R
P01	W	EN50377-6-2-P01-W
P01	U	EN50377-6-2-P01-U
P02	S	EN50377-6-2-P02-S
P02	T	EN50377-6-2-P02-T
P02	R	EN50377-6-2-P02-R
P02	W	EN50377-6-2-P02-W
P02	U	EN50377-6-2-P02-U
P03	S	EN50377-6-2-P03-S
P03	T	EN50377-6-2-P03-T
P03	R	EN50377-6-2-P03-R
P03	W	EN50377-6-2-P03-W
P03	U	EN50377-6-2-P03-U
P04	S	EN50377-6-2-P04-S
P04	T	EN50377-6-2-P04-T
P04	R	EN50377-6-2-P04-R
P04	W	EN50377-6-2-P04-W
P04	U	EN50377-6-2-P04-U
P05	S	EN50377-6-2-P05-S
P05	T	EN50377-6-2-P05-T
P05	R	EN50377-6-2-P05-R
P05	W	EN50377-6-2-P05-W
P05	U	EN50377-6-2-P05-U
P06	S	EN50377-6-2-P06-S
P06	T	EN50377-6-2-P06-T
P06	R	EN50377-6-2-P06-R
P06	W	EN50377-6-2-P06-W
P06	U	EN50377-6-2-P06-U
P07	S	EN50377-6-2-P07-S
P07	T	EN50377-6-2-P07-T
P07	R	EN50377-6-2-P07-R
P07	W	EN50377-6-2-P07-W
P07	U	EN50377-6-2-P07-U
P08	S	EN50377-6-2-P08-S
P08	T	EN50377-6-2-P08-T
P08	R	EN50377-6-2-P08-R
P08	W	EN50377-6-2-P08-W
P08	U	EN50377-6-2-P08-U

Table 6 – Q grade plugs

Variant number	Performance class (Return loss)	Identification number
Q01	S	EN50377-6-2-Q01-S
Q01	T	EN50377-6-2-Q01-T
Q01	R	EN50377-6-2-Q01-R
Q01	W	EN50377-6-2-Q01-W
Q01	U	EN50377-6-2-Q01-U
Q02	S	EN50377-6-2-Q02-S
Q02	T	EN50377-6-2-Q02-T
Q02	R	EN50377-6-2-Q02-R
Q02	W	EN50377-6-2-Q02-W
Q02	U	EN50377-6-2-Q02-U
Q03	S	EN50377-6-2-Q03-S
Q03	T	EN50377-6-2-Q03-T
Q03	R	EN50377-6-2-Q03-R
Q03	W	EN50377-6-2-Q03-W
Q03	U	EN50377-6-2-Q03-U
Q04	S	EN50377-6-2-Q04-S
Q04	T	EN50377-6-2-Q04-T
Q04	R	EN50377-6-2-Q04-R
Q04	W	EN50377-6-2-Q04-W
Q04	U	EN50377-6-2-Q04-U
Q05	S	EN50377-6-2-Q05-S
Q05	T	EN50377-6-2-Q05-T
Q05	R	EN50377-6-2-Q05-R
Q05	W	EN50377-6-2-Q05-W
Q05	U	EN50377-6-2-Q05-U
Q06	S	EN50377-6-2-Q06-S
Q06	T	EN50377-6-2-Q06-T
Q06	R	EN50377-6-2-Q06-R
Q06	W	EN50377-6-2-Q06-W
Q06	U	EN50377-6-2-Q06-U
Q07	S	EN50377-6-2-Q07-S
Q07	T	EN50377-6-2-Q07-T
Q07	R	EN50377-6-2-Q07-R
Q07	W	EN50377-6-2-Q07-W
Q07	U	EN50377-6-2-Q07-U
Q08	S	EN50377-6-2-Q08-S
Q08	T	EN50377-6-2-Q08-T
Q08	R	EN50377-6-2-Q08-R
Q08	W	EN50377-6-2-Q08-W
Q08	U	EN50377-6-2-Q08-U

Table 7 – Adaptor variants

Variant number	Identification number
C01	EN50377-6-2-C01