
Konektorski sestavi in povezovalne komponente za uporabo v optičnih komunikacijskih sistemih - Specifikacije proizvoda - 4-3. del: Tip SC/APC, simpleksni 9°, zaključen z enorodnim vlaknom tipa B-652.D in B-657.A po standardu EN 60793-2-50, s polno cirkonijevo tulko, kategorija OP

Connector sets and interconnect components to be used in optical fibre communication systems - Product specifications - Part 4 3: Type SC/APC simplex 9° terminated on EN 60793 2 50 of type B-652.D and B-657.A singlemode fibre with full zirconia ferrule, category OP

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EUROPEAN STANDARD
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ICS

English Version

**Connector sets and interconnect components to be used in
optical fibre communication systems - Product specifications
Part 4 3: Type SC/APC simplex 9° terminated on EN 60793 2 50
of type B-652.D and B-657.A singlemode fibre with full zirconia
ferrule, category OP**

To be completed

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This draft European Standard is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2020-06-12.

It has been drawn up by CLC/TC 86/BXA.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CENELEC in three official versions (English, French, German).
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42 European foreword

43 This document (prEN 50377-4-3:2020) has been prepared by CLC/TC 86BXA "Fibre optic interconnect, passive
44 and connectorised components".

45 This document is currently submitted to the Enquiry.

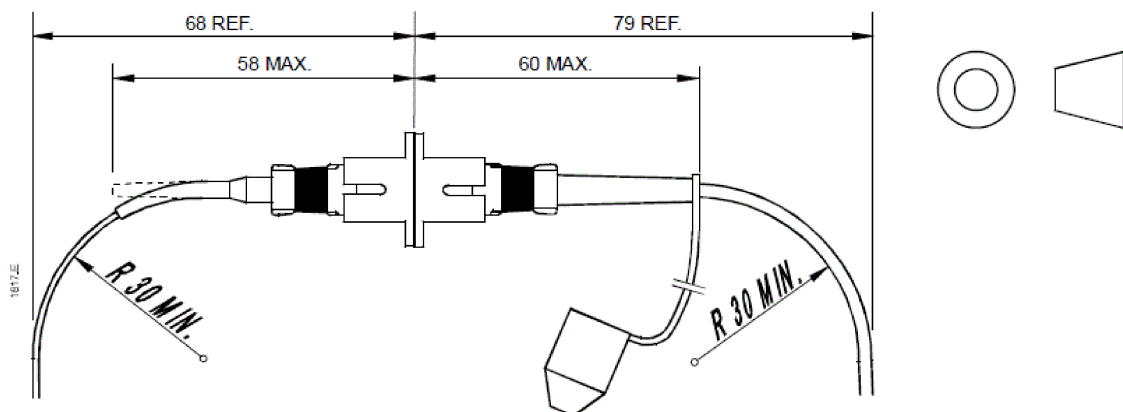
46 The following dates are proposed:

- latest date by which the existence of this document has to be announced at national level (doa) dor + 6 months
- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) dor + 12 months
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) dor + 36 months (to be confirmed or modified when voting)

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47 Introduction

Connector sets and interconnect components to be used in optical fibre communication systems — Product specifications			
Part 4–3: Type SC/APC simplex 9° terminated on EN 60793-2-50 of type B-652.D and B-657.A singlemode fibre with full zirconia ferrule, category OP			
Description		Performance	
Coupling mechanism:	Push-pull	Application:	For use in EN Category OP (outdoor protected environment)
Configuration:	Plug/adaptor/plug	Attenuation grade: (random mate)	B: $\leq 0,12$ dB mean $\leq 0,25$ dB for 97 % of measurements
Fibre category:	EN 60793-2-50 Types — B-652.D and B-657.A		
Cable type:	See Table 3	Return loss grade: (random mate)	1: ≥ 60 dB mated ≥ 55 dB unmated
Related documents: <div> <div>EN 60794-2</div> <div>Optical fibre cables — Part 2: Indoor cables — Sectional specification (IEC 60794-2)</div> </div> <div> <div>EN 61300 series</div> <div>Fibre optic interconnecting devices and passive components — Basic test and measurement procedures (IEC 61300 series)</div> </div> <div> <div>EN IEC 61753-1:2018</div> <div>Fibre optic interconnecting devices and passive components performance standard — Part 1: General and guidance for performance standards (IEC 61753-1)</div> </div> <div> <div>EN 61754-4</div> <div>Fibre optic connector interfaces — Part 4: Type SC connector family (IEC 61754-4)</div> </div> <div> <div>EN 61755-1</div> <div>Fibre optic connector optical interfaces — Part 1: Optical interfaces for singlemode non-dispersion shifted fibres — General and guidance (IEC 61755-1)</div> </div> <div> <div>ETSI EN 300 019 series</div> <div>Environmental Engineering (EE); Environmental conditions and environmental tests for telecommunications equipment</div> </div> <div> <div>ETSI TS 100 671</div> <div>Transmission and Multiplexing (TM); Passive optical components; Optical fibre connectors for single mode optical fibre communication systems; Common requirements and conformance testing</div> </div>			
Outline and maximum dimensions:  <p>The diagram shows a side view of the connector assembly with the following dimensions: 68 REF. (total length), 58 MAX. (length of the first ferrule), 79 REF. (total length including the second ferrule), and 60 MAX. (length of the second ferrule). The cable is shown with a minimum bend radius of R 30 MIN. Two cross-sectional views are provided: a circular view of the ferrule and a trapezoidal view of the connector body.</p>			

48 1 Scope

49 1.1 Product definition

50 This document contains the initial, start of life dimensional, optical, mechanical and environmental performance
 51 requirements which a connector terminated with cylindrical zirconia 9° angled PC ferrule and assembled singlemode
 52 resilient alignment sleeve SC-APC simplex connector set (plug/adaptor/plug), adaptor and patchcord meet in order
 53 for it to be categorized as an EN standard product. This document is intended to replace CECC 86 265-803.

54 Since different variants are permitted, product marking details are given in 4.6.

55 1.2 Intermateability

56 Products conforming to the requirements of this document are intended to intermate, and it is expected that the
 57 specified level of random attenuation performance will be met. The intention is that this will be true irrespective of
 58 the manufacturing source(s) of the product.

59 1.3 Operating environment

60 The tests selected, combined with the severities and durations, are representative of a category OP environment
 61 described in EN IEC 61753-1.

62 1.4 Reliability

63 Whilst the anticipated service life expectancy of the product in this environment is 20 years, compliance with this
 64 document does not guarantee the reliability of the product. This is expected to be predicted using a recognized
 65 reliability assessment programme.

66 1.5 Quality assurance

67 Compliance with this document does not guarantee the manufacturing consistency of the product. This is expected
 68 to be maintained using a recognized quality assurance programme.

69 2 Normative references

70 The following documents are referred to in the text in such a way that some or all of their content constitutes
 71 requirements of this document. For dated references, only the edition cited applies. For undated references, the
 72 latest edition of the referenced document (including any amendments) applies.

73 EN 61300-2-1, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 74 *procedures - Part 2-1: Tests - Vibration (sinusoidal) (IEC 61300-2-1)*

75 EN 61300-2-2, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 76 *procedures - Part 2-2: Tests - Mating durability (IEC 61300-2-2)*

77 EN 61300-2-4, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 78 *procedures - Part 2-4: Tests - Fibre/cable retention (IEC 61300-2-4)*

79 EN 61300-2-5, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 80 *procedures - Part 2-5: Tests - Torsion (IEC 61300-2-5)*

81 EN 61300-2-6, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 82 *procedures - Part 2-6: Tests - Tensile strength of coupling mechanism (IEC 61300-2-6)*

83 EN 61300-2-7, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 84 *procedures - Part 2-7: Tests - Bending moment (IEC 61300-2-7)*

85 EN 61300-2-12, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 86 *procedures - Part 2-12: Tests - Impact (IEC 61300-2-12)*

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- 87 EN 61300-2-17, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 88 *procedures - Part 2-17: Tests - Cold* (IEC 61300-2-17)
- 89 EN 61300-2-18, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 90 *procedures - Part 2-18: Tests - Dry heat - High temperature endurance* (IEC 61300-2-18)
- 91 EN 61300-2-22, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 92 *procedures - Part 2-22: Tests - Change of temperature* (IEC 61300-2-22)
- 93 EN 61300-2-26, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 94 *procedures - Part 2-26: Tests - Salt mist* (IEC 61300-2-26)
- 95 EN 61300-2-27, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 96 *procedures - Part 2-27: Tests - Dust - Laminar flow* (IEC 61300-2-27)
- 97 EN 61300-2-42, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 98 *procedures - Part 2-42: Tests - Static side load for strain relief* (IEC 61300-2-42)
- 99 EN 61300-2-44, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 100 *procedures - Part 2-44: Tests - Flexing of the strain relief of fibre optic devices* (IEC 61300-2-44)
- 101 EN 61300-2-46, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 102 *procedures - Part 2-46: Tests - Damp heat cyclic* (IEC 61300-2-46)
- 103 EN 61300-2-50, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 104 *procedures - Part 2-50: Tests - Fibre optic connector proof test with static load - Singlemode and multimode*
 105 *(IEC 61300-2-50)*
- 106 EN 61300-3-6, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 107 *procedures - Part 3-6: Examinations and measurements - Return loss* (IEC 61300-3-6)
- 108 EN 61300-3-10, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 109 *procedures - Part 3-10: Examinations and measurements - Gauge retention force* (IEC 61300-3-10)
- 110 EN 61300-3-34, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 111 *procedures - Part 3-34: Examinations and measurements - Attenuation of random mated connectors*
 112 *(IEC 61300-3-34)*
- 113 EN 61300-3-42, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 114 *procedures - Part 3-42: Examinations and measurements - Attenuation of single mode alignment sleeves and or*
 115 *adaptors with resilient alignment sleeves* (IEC 61300-3-42)
- 116 EN 61300-3-47, *Fibre optic interconnecting devices and passive components - Basic test and measurement*
 117 *procedures - Part 3-47: Examinations and measurements - End face geometry of PC/APC spherically polished*
 118 *ferrules using interferometry* (IEC 61300-3-47)

119 **3 Terms and definitions**

120 No terms and definitions are listed in this document.

121 ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- 122 • IEC Electropedia: available at <http://www.electropedia.org/>
- 123 • ISO Online browsing platform: available at <http://www.iso.org/obp>

124 4 Description

125 4.1 General

126 The SC-APC connector is a single position plug connector set of plug/adaptor/plug configuration characterized by
 127 a cylindrical, spring loaded butting ferrule of 2,5 mm nominal diameter and a latched push-pull coupling mechanism.
 128 The optical alignment mechanism of the connectors is of a resilient sleeve style.

129 4.2 Plug

130 The plug features a cylindrical zirconia ceramic ferrule and a push-pull coupling mechanism. The plug housing has
 131 a single male key, which is used to limit the relative rotation between mated plugs. A cover (dust cap) shall be
 132 provided to protect the ferrule end face when the connector is in the unmated condition.

133 4.3 Adaptor

134 The adaptor has a zirconia ceramic resilient alignment sleeve. The mounting style is a rectangular flange - simplex.
 135 Covers (dust caps) are provided to protect each port of the adaptor.

136 4.4 Materials

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

138 4.5 Dimensions

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

142 4.6 Colour and marking

143 Marking of the product shall be in the following order of precedence:

- 144 — identification of manufacturer;
- 145 — manufacturing date code: year/week;
- 146 — manufacturers part number;
- 147 — variant identification number.

148 The preferred colour scheme is given in Table 1.

149 **Table 1 — Preferred colour scheme**

Delatch housing SC-APC plug	Adaptor
Green, RAL 6029	Green, RAL 6029

150 5 Variants

151 5.1 Terminated plug

152 The defined fibre/cable variants are given in Table 2.

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153

Table 2 — Plug variants

E	N	5	0	3	7	7	-	4	-	3	-	*	*	-	B	1

154 5.2 Adaptor

155 The defined adaptor variants are given in Table 3.

156

Table 3 — Adaptor variants

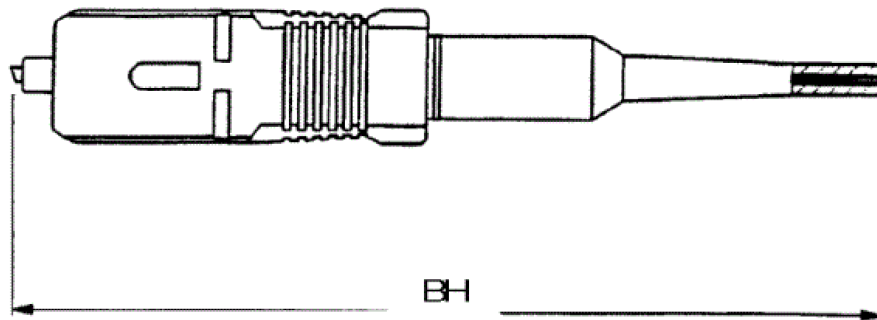
E	N	5	0	3	7	7	-	4	-	3	-	*	*	*
Variant number								Format						
A01								Rectangular flange - simplex						

157 6 Dimensional requirements

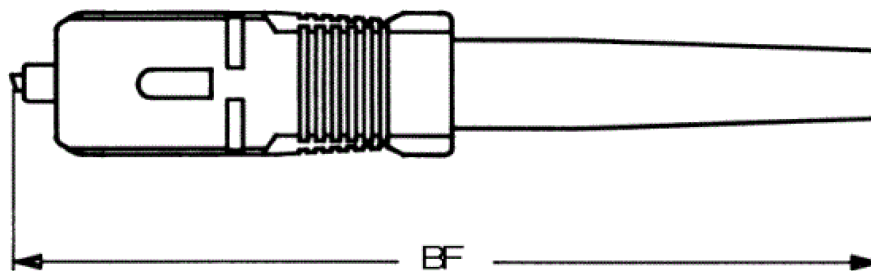
158 6.1 Outline dimensions

159 6.1.1 Plug

160 Figure 1 gives the outline dimensions of plugs.



Variant No. 01



Variant No. 02 - 06

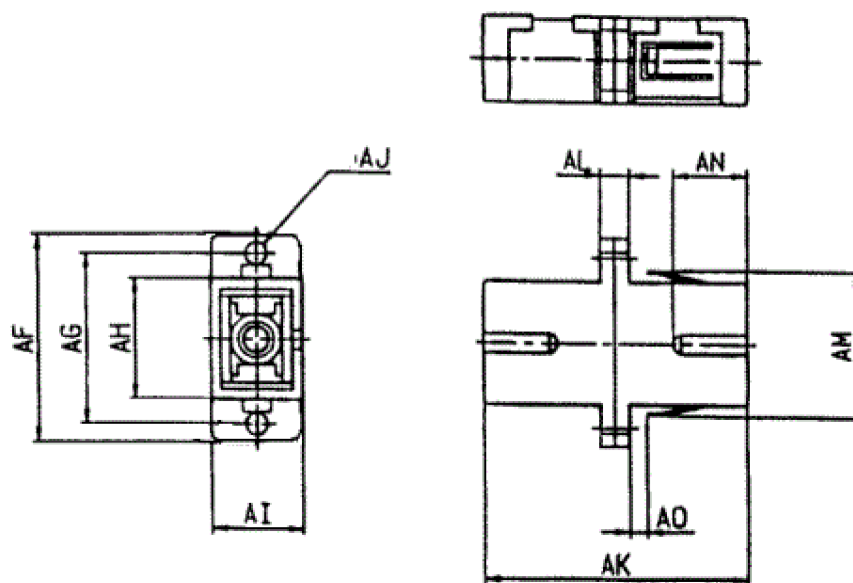
Ref.	Dimensions		Note
	min.	max.	
BH	58	58	
BF	60	60	

Figure 1 — Outline dimensions — Plug

6.1.2 Adaptor

Figures 2 gives the outline dimensions of adaptors.

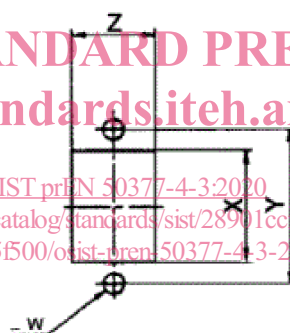
Variant No. A01



a) Adaptor

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b) Panel cut out

Ref.	Dimensions		Note
	min.	max.	
AF	21,5	22,5	Diameter
AG	17,9	18,1	
AH	12,6	13,0	
AI	9,2	9,4	
AJ	2,2	2,4	
AK	27,0	27,8	
AL	2,8	3,2	
AM	14,4	16,4	
AN	7,7	8,0	
AO	1,7	2,0	
W	2,4	2,6	See ^a Diameter
X	13,1	13,5	
Y	17,9	18,1	
Z	9,5	10,0	
a	Panel thickness should be between 1,0 mm and 1,5 mm.		

Figure 2 — Adaptor outline dimensions