

Fibre optic spatial switches - Part 1: Generic specification (IEC 60876-1:2001)

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EUROPEAN STANDARD

EN 60876-1

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October 2001

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**Fibre optic spatial switches
Part 1: Generic specification
(IEC 60876-1:2001)**

Commutateurs spatiaux à fibres optiques
Partie 1: Spécification générique
(CEI 60876-1:2001)

Räumliche Umschalter für
Lichtwellenleiter
Teil 1: Fachgrundspezifikation
(IEC 60876-1:2001)

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This European Standard was approved by CENELEC on 2001-10-01. 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

The text of document 86B/1466/FDIS, future edition 3 of IEC 60876-1, prepared by SC 86B, Fibre optic interconnecting devices and passive components, of IEC TC 86, Fibre optics, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60876-1 on 2001-10-01.

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) 2002-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2004-10-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60876-1:2001 was approved by CENELEC as a European Standard without any modification.

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

		<u>SIST EN 60876-1:2002</u>
IEC 60068	NOTE	Harmonized in the series EN 60068 (modified). https://standards.iteh.ai/catalog/standards/sist-en-60876-1-2002
IEC 60874	NOTE	Harmonized in the series EN 60874 (modified).
IEC 61753	NOTE	Harmonized in the series EN 61753 (modified).
IEC 61754-2	NOTE	Harmonized as EN 61754-2:1997 (not modified).
IEC 61754-4	NOTE	Harmonized as EN 61754-4:1997 (not modified).
IEC 61754-13	NOTE	Harmonized as EN 61754-13:1999 (not modified).
IEC 62005	NOTE	Harmonized in the series EN 62005 (modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60027	Series	Letter symbols to be used in electrical technology	HD 245	Series
IEC 60050-731	-1)	International Electrotechnical Vocabulary (IEV) Chapter 731: Optical fibre communication		
IEC 60410	-1)	Sampling plans and procedures for inspection by attributes	-	-
IEC 60617	Series	Graphical symbols for diagrams	EN 60617	Series
IEC 60695-2-2	-1)	Fire hazard testing Part 2: Test methods -- Section 2: Needle-flame test	EN 60695-2-2	1994 ²⁾
IEC 60825-1	-1)	Safety of laser products Part 1: Equipment classification, requirements and user's guide	EN 60825-1 + corr. February + A11	1994 1994 1996
IEC 61300	Series	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures	EN 61300	Series
IEC/TR3 61930	-1)	Fibre optic graphical symbology	-	-
IEC QC 001001	1998	Basic rules of the IEC Quality Assessment System for Electronic Components (IECQ)	-	-
IEC QC 001002	Series	Rules of procedure of the IEC Quality Assessment System for Electronic Components (IECQ)	-	-

1) undated reference.

2) valid edition at date of issue.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC Guide 102	- ¹⁾	Electronic components - Specification structures for quality assessment (Qualification approval and capability approval)	-	-
ISO 129	- ¹⁾	Technical drawings - Dimensioning - General principles, definitions, methods of execution and special indications	-	-
ISO 286-1	- ¹⁾	ISO system of limits and fits Part 1: Bases of tolerances, deviations and fit	EN 20286-1	1993 ²⁾
ISO 1101	3)	Geometrical Product Specification (GPS) - Geometrical tolerancing - Generalities, definitions, symbols, indications on drawings	-	-
ISO 8601	1988	Data elements and interchange formats - Information interchange - Representation of dates and times	EN 28601	1992

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³⁾ To be published.

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Commutateurs spatiaux à fibres optiques –

**Partie 1:
Spécification générique**

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Fibre optic spatial switches –
(standards.iteh.ai)

**Part 1:
Generic specification**

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIBRE OPTIC SPATIAL SWITCHES –

Part 1: Generic specification

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60876-1 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This third edition cancels and replaces the second edition, published in 1994, and constitutes a technical revision.

The text of this standard is based on the following documents:

FDIS	Report on voting
86B/1466/FDIS	86B/1534/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

The QC number that appears on the front cover of this publication is the specification number in the IEC Quality Assessment System for Electronic Components (IECQ).

The committee has decided that the contents of this publication will remain unchanged until 2008. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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INTRODUCTION

This part of IEC 60876 is divided into three clauses.

Clause 1, "General", contains the scope, the normative references and the definitions which pertain to this generic specification.

Clause 2, "Requirements", contains all of the requirements to be met by switches covered by this standard. These include requirements for classification, the IEC specification system, documentation, materials, workmanship, quality, performance, identification, and packaging.

Clause 3, "Quality assessment procedures", contains all of the procedures to be followed for proper quality assessment of products as covered by this standard.

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FIBRE OPTIC SPATIAL SWITCHES –

Part 1: Generic specification

1 General

1.1 Scope

This part of IEC 60876 applies to fibre optic switches possessing all of the following general features:

- they are passive in that they contain no optoelectronic or other transducing elements;
- they have one or more ports for the transmission of optical power and two or more states in which power may be routed or blocked between these ports;
- the ports are optical fibres or optical fibre connectors.

This standard establishes uniform requirements for:

- fibre optic switch requirements;
- quality assessment procedures.

1.2 Normative references **(standards.iteh.ai)**

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60876. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 60876 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60027 (all parts), *Letter symbols to be used in electrical technology*

IEC 60050(731), *International Electrotechnical Vocabulary (IEV) – Chapter 731: Optical fibre communication*

IEC 60410, *Sampling plans and procedures for inspection by attributes*

IEC 60617 (all parts), *Graphical symbols for diagrams*

IEC 60695-2-2, *Fire hazard testing – Part 2: Test methods – Section 2: Needle-flame test*

IEC 60825-1, *Safety of laser products – Part 1: Equipment classification, requirements and user's guide*

IEC 61300 (all parts), *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures*

IEC 61930, *Fibre optic graphical symbology*