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Edition 2.0 2014-04

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NORME INTERNATIONALE

Withdrawn

Fibre optic interconnecting devices and passive components – Basic test and measurement procedures –
Part 3-21: Examinations and measurements – Switching time

Dispositifs d'interconnexion et composants passifs à fibres optiques – Procédures fondamentales d'essais et de mesures –
Partie 3-21: Examens et mesures – Temps de commutation

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FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – BASIC TEST AND MEASUREMENT PROCEDURES –

Part 3-21: Examinations and measurements – Switching time

FOREWORD

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International Standard IEC 61300-3-21 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

This second edition cancels and replaces the first edition published in 1998. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) removal of "bounce time" from the title;

b) update and alignment of definitions with IEC 60876-1;

c) generalization of the detection apparatus beyond an oscilloscope.

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

CDV	Report on voting
86B/3623/CDV	86B/3702/RVC

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 2.

A list of all parts in the IEC 61300 series, published under the general title, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures,* can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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- replaced by a revised edition, or
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FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – BASIC TEST AND MEASUREMENT PROCEDURES –

Part 3-21: Examinations and measurements – Switching time

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1 Scope

This part of IEC 61300 is a method to measure the switching time and related performance parameters of an optical switch when the actuation energy is applied or removed to change the state of the switch.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 61300-1, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 1: General and guidance*

IEC 61300-3-4, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-4: Examinations and measurements – Attenuation*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
latency time

3.1.1
latency time
<switching from isolated state to conducting state> elapsed time until the output power of a specified output port reaches 10 % of its steady-state value of the output power from the time the actuation energy is applied for a normally-on switch or is removed for a normally-off switch

[SOURCE: IEC 60876-1:2012, 3.3.4.1, modified – “for a normally-on switch or is removed for a normally-off switch” has been added.]

3.1.2
latency time
<switching from conducting state to isolated state> elapsed time until the output power of a specified output port reaches 90 % of its steady-state value of the output power from the time the actuation energy is removed for a normally-on switch or is applied for a normally-off switch

Note 1 to entry: For a latch type optical switch, in case of switching from conducting state to isolated state, actuation energy is applied or removed.

[SOURCE: IEC 60876-1:2012, 3.3.4.2, modified – “for a normally-on switch or is removed for a normally-off switch” and Note 1 to entry have been added.]

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3.2
rise time
elapsed time for the output power of the specified output port to rise from 10 % of the steady-state conducting value to 90 % of the steady-state conducting value

[SOURCE: IEC 60876-1:2012, 3.3.5, modified – “conducting” has been added.]

3.3
fall time
elapsed time for the output power of the specified output port to fall from 90 % of the steady-state conducting value to 10 % of the steady-state conducting value

[SOURCE: IEC 60876-1:2012, 3.3.6, modified – “conducting” has been added.]

3.4
bounce time

3.4.1
bounce time
<switching from isolated state to conducting state> elapsed time until the output power of a specified output port is maintained between 90 % and 110 % of its steady-state value of the output power from the first time the output power of a specified output port reaches 90 % of its steady-state value of the output power

[SOURCE: IEC 60876-1:2012, 3.3.7.1]

3.4.2
bounce time
<switching from conducting state to isolated state> elapsed time until the output power of a specified output port is maintained between 0 % and 10 % of its steady-state conducting value of the output power from the first time the output power of a specified output port reaches 10 % of its steady-state conducting value of the output power

[SOURCE: IEC 60876-1:2012, 3.3.7.2]

3.5
switching time

3.5.1
switching time
<switching from isolated state to conducting state>

$t_s = t_l + t_r + t_b$

where t_l, t_r, and t_b are the latency time, rise time, and bounce time, respectively

[SOURCE: IEC 60876-1:2012, 3.3.8.1]

3.5.2
switching time
<switching from conducting state to isolated state>

$t_s = t_{l'} + t_f + t_{b'}$

where $t_{l'}$, t_f, and $t_{b'}$ are the latency time, fall time, and bounce time, respectively

[SOURCE: IEC 60876-1:2012, 3.3.8.2]

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