



## REDLINE VERSION



BASIC SAFETY PUBLICATION

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### Effects of current on human beings and livestock – Part 2: Special aspects

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### EFFECTS OF CURRENT ON HUMAN BEINGS AND LIVESTOCK –

#### Part 2: Special aspects

#### FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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**This Redline version provides you with a quick and easy way to compare all the changes between this standard and its previous edition. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.**

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- the required support cannot be obtained for the publication of an International Standard, despite repeated efforts, or
- the subject is still under technical development or where, for any other reason, there is the future but no immediate possibility of an agreement on an International Standard.

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Draft TS	Report on voting
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This Technical Specification has the status of a basic safety publication in accordance with IEC Guide 104.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60479 series, published under the general title *Effects of current on human beings and livestock*, 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 website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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- withdrawn,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

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## EFFECTS OF CURRENT ON HUMAN BEINGS AND LIVESTOCK –

### Part 2: Special aspects

#### 1 Scope

This part of IEC 60479 describes the effects on the human body when a sinusoidal alternating current in the frequency range above 100 Hz passes through it.

The effects of current passing through the human body for:

- alternating sinusoidal current with DC components;
- alternating sinusoidal current with phase control;
- alternating sinusoidal current with multicycle control

are given but are only deemed applicable for alternating current frequencies from 15 Hz up to 100 Hz.

~~NOTE 1—Other waveforms are under consideration.~~

Means of extending the frequency of applicability of pure sinusoids to a frequency of 150 kHz are given, supplementing the data in IEC TS 60479-1.

Means of examining random complex irregular waveforms are given.

This document describes the effects of current passing through the human body in the form of single **and multiple successive** unidirectional rectangular impulses, sinusoidal impulses and impulses resulting from capacitor discharges.

~~NOTE 2—The effects of sequences of impulses are under consideration.~~

The values specified are deemed to be applicable for impulse durations from 0,1 ms up to and including 10 ms. ~~For impulse durations greater than 10 ms, the values given in Figure 20 of IEC 60479-1 apply.~~

This document only considers conducted current resulting from the direct application of a source of current to the body, as does IEC TS 60479-1 and IEC TS 60479-3. It does not consider current induced within the body caused by its exposure to an external electromagnetic field.

This basic safety publication is primarily intended for use by technical committees in the preparation of standards in accordance with the principles laid down in IEC Guide 104 and ISO/IEC Guide 51. It is not intended for use by manufacturers or certification bodies.

One of the responsibilities of a technical committee is, wherever applicable, to make use of basic safety publications in the preparation of its publications. The requirements, test methods or test conditions of this basic safety publication will not apply unless specifically referred to or included in the relevant publications.

#### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

IEC TS 60479-1:2005, *Effects of current on human beings and livestock – Part 1: General aspects*

IEC TS 60479-1:2005/AMD1:2016

~~IEC 60479-3, *Effects of current on human beings and livestock – Part 3: Effects of currents passing through the body of livestock*~~

IEC 60990, *Methods of measurement of touch-current and protective conductor current*

ISO/IEC Guide 51, *Safety aspects – Guidelines for their inclusion in standards*

IEC Guide 104, *The preparation of safety publications and the use of basic safety publications and group safety publications*





# TECHNICAL SPECIFICATION



BASIC SAFETY PUBLICATION

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A bilingual version of this publication may be issued at a later date.

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