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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 13870.2-2016

**Effects of current on human beings and livestock -- Part 2:
Special aspects
(English Translation)**

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Foreword

GB/T 13870 Effects of Current on Human Beings and Livestock consists of the following 5 parts.

- Part 1.General Aspects;
- Part 2.Special Aspects;
- Part 3.Effects of Currents Passing through the Body of Livestock;
- Part 4.Effects of Lightning Strokes Passing through the Body of Human Beings and Livestock;
- Part 5.Touch Voltage Threshold Values for Physiological Effects.

This Part is Part 2 of GB/T 13870.

This Part was drafted as per the rules specified in GB/T 1.1-2009 and GB/T 20000.2-2009.

This Part replaced GB/T 13870.2-1997 Effects of Current on Human Beings and Livestock - Part 2.Special Aspects. Compared with GB/T 13870.2-1997, the major technical changes of this Part are as follows.

- Further improve the following technical contents. Effects of AC current with a DC component, AC current with phase control, and AC current with multi-cycle control in the frequency range of 15 Hz to 100 Hz passing through the human body (see Clauses 5,

6, and 7 of this Edition);

--- Add the estimation of equivalent current thresholds at mixed frequencies (see Clause 8 of this Edition);

--- Add the effect of repetitive pulse current on the threshold of ventricular fibrillation (see Clause 9 of this Edition);

--- Add the effects of current passing through a human body immersed in water (see Clause

10 of this Edition).

This Part used translation method to equivalently adopt IEC/TS 60479-2:2007 (Version 3) Effects of Current on Human Beings and Livestock - Part 2: Special Aspects. Compared with IEC/TS 60479-2:2007 (Version 3), the clause No. of this Part was completely consistent, the

technical contents were also completely consistent; but this Part made the following editorial modifications.

--- Replace the decimal point symbol "," with the decimal point symbol ".";

Effects of Current on Human Beings and Livestock - Part 2.

Special Aspects

1 Scope

This Part of GB/T 13870 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 d.c. components,

--- alternating sinusoidal current with phase control,

--- alternating sinusoidal current with multicycle control,

are given in this Part but are only deemed applicable for alternating current frequencies from

15 Hz up to 100 Hz.

NOTE 1: Other waveforms are under consideration.

This Part furthermore describes the effects of current passing through the human body in the

form of single unidirectional rectangular impulses, sinusoidal impulses and impulses resulting

from capacitor discharges.

NOTE 2: The effects of sequences of impulses are under consideration.

The specified values 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 GB/T 13870.1-2008 apply.

This Part only considers conducted current resulting from the direct application of a source of

current to the body, as does GB/T 13870.1-2008 and GB/T 13870.3. It does not consider current

induced within the body caused by its exposure to an external electromagnetic field.

2 Normative References

The following documents are essential to the application of this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the

undated documents, only the latest version (including all the amendments) is applicable to this

Document.

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