

	INSTRUCTION DE SÉCURITÉ SAFETY INSTRUCTION	N° 33 Rev. 1
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VOLTAGE DOMAINS

according to IEC

This document is published by the TIS Commission under the provisions of the CERN Safety Codes and with the reference to the laws in force.

According to the voltage value (r.m.s. for alternating current) electrical installations are classified as follows:

1. Extra Low Voltage in general (E.L.V.)

Installations in which the voltage does not exceed 50 V for alternating current (A.C.) and 120 V for direct current (D.C.)

1. a) Safe Extra Low Voltage (S.E.L.V.)

E.L.V. with additional conditions:

- (i) All active parts are separated from all other installations by double or reinforced insulation.
- (ii) All active parts are insulated from earth.
- (iii) All active parts are insulated from the earth conductor of other installations.

1. b) Protected Extra Low Voltage (P.E.L.V.)

E.L.V. with additional condition:

All active parts are separated from all other installations by double or reinforced insulation.

1. c) Functional Extra Low Voltage (F.E.L.V.)

E.L.V. without additional conditions.

2. Low Voltage A (L.V.A)

Installations in which the voltage is greater than 50 V but does not exceed 500V for alternating current (A.C.).

Installations in which the voltage is greater than 120 V but does not exceed 750 V for direct current (D.C.).

3. Low Voltage B (L.V.B)

Installations in which the voltage is greater than 500 V but does not exceed 1000V for alternating current (A.C.).

Installations in which the voltage is greater than 750 V but does not exceed 1500V for direct current (D.C.).

4. High Voltage A (H.V.A)

Installations in which the voltage is greater than 1000 V but does not exceed 50000V for alternating current (A.C.).

Installations in which the voltage is greater than 1500 V but does not exceed 75000V for direct current (D.C.).

5. High Voltage B (H.V.B)

Installations in which the voltage is greater than 50000 V for alternating current. (A.C.)

Installations in which the voltage is greater than 75000 V for direct current. (D.C.)

Remarks:

Smooth direct current is defined having a maximum ripple of 10% r.m.s. with the peak value not exceeding 15% of the r.m.s. value

For all other direct currents the values of the tensions for alternating current must be used.

During normal exploitation of equipment or of a part thereof the actual value of the tension may exceed the nominal value by 10% without provoking a reclassification of the installation. Equipment for electrical traction may exceed the nominal value of tension by 20%.