

SFS-IEC 60050-195
Sähkötekniinen sanasto (IEV)
Osa 195 - Maadoitus ja suojaus sähköiskulta

IEC 60050-195 ed 2.0, 2021
International Electrotechnical Vocabulary (IEV)
Part 195 - Earthing and protection against electric shock

195-01 Peruskäsitteet
195-01 Fundamental concepts

195-02 Sähköasennukset ja -laitteet
195-02 Electrical installations and equipment

195-03 Sähköisku ja kynnysvirrat
195-03 Electric shock and threshold currents

195-04 Toiminta
195-04 Operation

195-05 Jännitteet ja virrat
195-05 Voltages and currents

195-06 Sähköturvallisuuden suojausmenetelmät
195-06 Protective measures for electrical safety

195-01 Peruskäsitteet 195-01 Fundamental concepts

195-01-01 referenssimaa

reference earth reference ground, US

part of the Earth considered as conductive, the electric potential of which is conventionally taken as zero, being outside the zone of influence of any earthing arrangement

Note 1 to entry: The concept "Earth" means the planet and all its physical matter.

fr	terre de référence, f
de	Bezugserde, f
sv	referensjord

195-01-02 sähköinen kosketus

electric contact

See [IEV 151-12-03](#)

[state of two conductive parts which touch each other intentionally or accidentally and form a single continuous conductive path]

Note 1 to entry: See also the concept "contact" in [151-12-15](#).

fr	contact électrique,
de	elektrischer Kontakt, m
sv	elektrisk kontakt

195-01-03 paikallinen maa

local earth local ground, US

part of the Earth that is in electric contact with an earth electrode and that has an electric potential not necessarily equal to zero

fr	terre locale, f
de	örtliche Erde, f; Erde, f
sv	lokal jord

195-01-04
sähköisku**electric shock**, <protection against electric shock>

physiological effect resulting from an electric current passing through a human body or livestock

fr choc électrique, <protection contre les chocs électriques> m
de elektrischer Schlag, m
sv elchock, skydd mot elchock

195-01-05
POISTETTU**195-01-06**
johtava osa**conductive part**

part that can carry electric current

fr partie conductrice, f
de leitfähiges Teil, n
sv ledande del

195-01-07
johdin**conductor**, <protection against electric shock>

conductive part intended to carry an electric current

fr conducteur, <dans le contexte de la protection contre les chocs électriques> m
de Leiter, <Schutz gegen elektrischen Schlag> m
sv ledare, skydd mot elchock

195-01-08
maadoittaa**earth**, verb
ground, verb US

to make an electric connection between a c onductive part and a l ocal earth Note 1 to entry:
The connection to local earth can be

- intentional, or unintentional or accidental
- and can be permanent or temporary.

fr mettre à la terre, verbe
de erden, Verb
sv jorda

195-01-09
tasapotentiaali**equipotentiality**

state when conductive parts are at a substantially equal electric potential

fr	équipotentialité, f
de	Potentialgleichheit, f
sv	ekvipotentialitet

195-01-10
potentiaalintasaus**equipotential bonding**

set of electric connections intended to achieve equipotentiality between conductive parts

fr	liaison équipotentielle, f
de	Potentialausgleich, m
sv	potentialutjämning

195-01-11
suojamaadoitus**protective earthing**
protective grounding, US

earthing for purposes of electrical safety

fr	mise à la terre de protection, f
de	Schutzerdung, f
sv	skyddsjordning

195-01-12
työmaadoitus**earthing for work**
grounding for work, US

earthing of isolated live parts so that work can be performed without danger of electric shock

Note 1 to entry: Isolation is defined in [IEV 195-06-23](#).

fr	mise à la terre pour travaux, f
de	Arbeitserdung, f
sv	arbetsjordning

195-01-13**toiminnallinen maadoitus****functional earthing****functional grounding, US**

earthing for purposes other than electrical safety

fr	mise à la terre fonctionnelle, f
de	Funktionserdung, f
sv	funktionsjordning

195-01-14**järjestelmän maadoitus****käyttömaadoitus****system earthing****system grounding, US**

functional earthing and protective earthing of an electric system

fr	mise à la terre du réseau, f
de	Netzbetriebserdung, f; Betriebserdung eines Netzes, f
sv	systemjordning

195-01-15**suojaava potentiaalintasaus****protective-equipotential-bonding**

equipotential bonding for the purposes of electrical safety

fr	liaison équipotentielle de protection, f
de	Schutzpotentialausgleich, m
sv	skyddsutjämning

195-01-16**toiminnallinen potentiaalintasaus****functional-equipotential-bonding**

equipotential bonding for reasons other than electrical safety

fr	liaison équipotentielle fonctionnelle, f
de	Funktionspotentialausgleich, m
sv	funktionsutjämning

195-01-17**maadoitusimpedanssi****impedance to earth****impedance to ground, US**

impedance at a given frequency between a specified point in a system or in an installation or in equipment and reference earth

fr	impédance de mise à la terre, f
de	Impedanz gegen Bezugserde, f
sv	impedans till jord

195-01-18**POISTETTU****195-01-19****POISTETTU****195-01-20****sähköturvallisuus****electrical safety**

freedom from risk that is not tolerable and which is caused by electricity

fr	sécurité électrique, f
de	elektrische Sicherheit, m
sv	elsäkerhet

195-01-21**normaalitila****normal condition**

See [IEV 903-02-07](#)

[condition in which all means of protection are intact]

fr	condition normale, f
de	Normalzustand, m
sv	normalt förhållande

195-01-22
vahvistettu suojaus**reinforced protection**

See [IEV 903-02-08](#)

[single protection system, which provides a degree of protection against hazards equivalent to two levels of protection]

fr protection renforcée, f
de verstärkter Schutz, m
sv förstärkt skydd

195-01-23
yhden vian ehto**single fault condition**

See [IEV 903-01-15](#)

[condition in which there is a fault of a single protection (but not a reinforced protection) or of a single component or a device

Note 1 to entry: If a single fault condition results in one or more other fault conditions, all are considered as one single fault condition.]

fr condition de premier défaut, f
de Einzelfehler, m
sv enkelfelstillstånd

195-01-24
maadoitus**earthing**
grounding, US

electric connections between conductive parts and local earth

fr mise à la terre, f
de Erdung, f
sv jordning

195-02 Sähköasennukset ja -laitteet 195-02 Electrical installations and equipment

195-02-01 maadoituselektrodi

earth electrode ground electrode, US

conductive part that is in electric contact with local earth, directly or through an intermediate conductive medium

fr prise de terre, f; électrode de terre, f
de Erder, m
sv jordelektrod

195-02-02 riippumaton maadoituselektrodi

independent earth electrode independent ground electrode, US

earth electrode located at such a distance from other earth electrodes that its electric potential is not significantly affected by electric currents between Earth and other earth electrodes

fr prise de terre indépendante, f; électrode de terre indépendante, f
de unabhängiger Erder, m
sv oberoende jordelektrod

195-02-03 maadoitusjohdin

earthing conductor grounding conductor, US

conductor forming a conductive path between a conductive part and an earth electrode

EXAMPLE A conductor connected between a main earthing terminal or busbar and an earth electrode.

fr conducteur de mise à la terre, m; conducteur de terre, m
de Erdungsleiter, m
sv jordningsledare

195-02-04
keskipiste**mid-point**

common point between two symmetrical circuit elements of which the opposite ends are electrically connected to different line conductors of the same circuit

fr point milieu, m
de Mittelpunkt, m
sv mittpunkt

195-02-05
nollapiste
tähtipiste**neutral point**

common point of a star-connected polyphase system

fr point neutre, m
de Neutralpunkt, m
sv neutralpunkt

195-02-06
nollajohdin**neutral conductor**

conductor electrically connected to the neutral point and capable of contributing to the distribution of electric energy

fr conducteur de neutre, m; conducteur neutre, m
de Neutralleiter, m
sv neutralledare

195-02-07
keskipistejohdin**mid-point conductor**

conductor electrically connected to the mid-point and capable of contributing to the distribution of electric energy

fr conducteur de point milieu, m
de Mittelpunktleiter, m
sv mittpunktsledare

195-02-08
äärijohdin**line conductor**

conductor intended to be energized and capable of contributing to the transmission or distribution of electric energy but which is not a neutral conductor or mid-point conductor

Note 1 to entry: A definition restricted to polyphase systems is given in [IEV 141-03-02](#).

fr	conducteur de phase, m
de	Außenleiter, m
sv	linjeledare

195-02-09
suojajohdin**protective conductor**

conductor provided for purposes of electrical safety

fr	conducteur de protection, m
de	Schutzleiter, m
sv	skyddsledare

195-02-10
suojaava potentiaalintasausjohdin**protective bonding conductor**

protective conductor provided for protective-equipotential-bonding

fr	conducteur de liaison de protection, m; conducteur d'équipotentialité, m
de	Schutzpotentialausgleichsleiter, m
sv	skyddsutjämningsledare

195-02-11
suojamaadoitusjohdin**protective earthing conductor**
PE conductor
protective grounding conductor, US

protective conductor provided for protective earthing

fr	conducteur de mise à la terre de protection, m
de	Schutzerdungsleiter, m
sv	skyddsjordsledare

195-02-12
PEN-johdin**PEN conductor**

conductor combining the functions of both a protective earthing conductor and a neutral conductor

fr conducteur PEN, m
de PEN-Leiter, m
sv PEN-ledare

195-02-13
PEM-johdin**PEM conductor**

conductor combining the functions of both a protective earthing conductor and a mid-point conductor

fr conducteur PEM, m
de PEM-Leiter, m
sv PEM-ledare

195-02-14
PEL-johdin**PEL conductor**

conductor combining the functions of both a protective earthing conductor and a line conductor

fr conducteur PEL, m
de PEL-Leiter, m
sv PEL-ledare

195-02-15
toiminnallinen maadoitusjohdin**functional earthing conductor**
functional grounding conductor, US

conductor provided for functional earthing

fr conducteur de mise à la terre fonctionnelle, m
de Funktionserdungsleiter, m
sv funktionsjordsledare

195-02-16
toiminnallinen potentiaalintasausjohdin**functional bonding conductor**

conductor provided for functional-equipotential-bonding

fr conducteur de liaison fonctionnelle, m
de Funktionspotentialausgleichsleiter, m
sv funktionsutjämningsledare

195-02-17
toiminnallinen ja suojamaadoitusjohdin**protective and functional earthing conductor**
protective and functional grounding conductor, US

conductor combining the functions of both a protective earthing conductor and a functional earthing conductor

fr conducteur de mise à la terre de protection et de mise à la terre fonctionnelle, m
de Schutzerdungs- und Funktionserdungsleiter, m
sv skydds- och funktionsjordsledare

195-02-18
toiminnallinen ja suojapotentiaalintasausjohdin**protective and functional bonding conductor**

conductor combining the functions of both a protective bonding conductor and a functional bonding conductor

fr conducteur de liaison de protection et de liaison fonctionnelle, m
de Schutzpotential- und Funktionspotentialausgleichsleiter, m
sv skydds- och funktionsutjämningsledare

195-02-19
jännitteinen osa**live part, <in electrical installations and equipment>**

conductive part intended to be energized under normal operating conditions, including the neutral conductor and mid-point conductor, but excluding the PEN conductor, PEM conductor and PEL conductor

fr partie active, <installations et matériels électriques> f; partie sous tension, <installations et matériels électriques> f
de aktives Teil, n
sv spänningsatt del

195-02-20
maadoitusjärjestelmä**earthing arrangement**
grounding arrangement, US

all electrical means involved in the earthing of a system, installation or equipment

Note 1 to entry: Electric connection and devices used for earthing are examples of electrical means.

fr	installation de mise à la terre, f
de	Erdungsanlage, f
sv	jordningsystem

195-02-21
maadoituselektrodiverkko**earth-electrode network**
ground-electrode network, US

part of an earthing arrangement comprising only the earth electrodes and their interconnections

fr	réseau de prises de terre, m
de	Erdernetz, n
sv	sammanhängande jordelektrodsnät

195-02-22
potentiaalintasausjärjestelmä**equipotential bonding system**
EBS

interconnection of conductive parts providing equipotential bonding between those parts

fr	réseau équipotentiel, m
de	Potentialausgleichsanlage, f
sv	potentialutjämningsystem

195-02-23
suojaava potentiaalintasausjärjestelmä**protective equipotential bonding system**
PEBS

equipotential bonding system providing protective-equipotential-bonding

fr	réseau équipotentiel de protection, m
de	Schutzpotentialausgleichsanlage, f
sv	skyddsutjämningsystem

195-02-24**toiminnallinen potentiaalintasausjärjestelmä****functional equipotential bonding system****FEBS**

equipotential bonding system providing functional-equipotential-bonding

fr	réseau équipotentiel fonctionnel, m
de	Funktionspotentialausgleichsanlage, f
sv	funktionsutjämningsystem

195-02-25**yhteinen potentiaalintasausjärjestelmä****common equipotential bonding system****common bonding network****CBN**

equipotential bonding system providing both protective-equipotential-bonding and functional-equipotential-bonding

fr	réseau commun de liaison équipotentielle, m
de	kombinierte Potentialausgleichsanlage, f
sv	gemensamt potentialutjämningsystem

195-02-26**reduktiojohdin****overhead earth wire****overhead ground wire, US**

conductor intentionally earthed at some or all supports of an overhead line, that is generally but not necessarily installed above the line conductors

fr	câble de garde, m
de	Erdseil, n
sv	topplina

195-02-27**pylväänmaadoitusjärjestelmä****electric counterpoise system****counterpoise system**

system of conductors, buried in the ground, and electrically connecting the footings of the supports of an overhead line

fr	contrepois électrique, m
de	Bodenseil, n
sv	följeledarsystem

195-02-28**kaapelireittimaadoituselektrodi****underground cable-route earth electrode**
underground cable-route ground electrode, US

earth electrode usually laid along the cable route to provide earthing along its route

fr prise de terre enterrée associée à un câble, f
de Kabellängserder, m
sv följeledare

195-02-29**rinnakkaismaadoitusjohdin****parallel-earthing-conductor**
parallel-grounding-conductor, US

conductor usually laid along the cable route to provide a low impedance connection between the earthing arrangements at the ends of the cable route

fr conducteur de terre en parallèle, m
de Parallelerdungsleiter, m
sv parallelljordad följeledare

195-02-30**maapaluujohdin****earth-return path**
ground-return path, US

electrically conductive path provided by the Earth between earthing arrangements

fr retour par la terre, m
de Erdrückleitung, f
sv markåterledning

195-02-31**maadoitusliitin****earthing terminal**
grounding terminal, US

terminal provided on equipment and intended for the electric connection with the earthing arrangement

fr borne de terre, f
de Erdungsklemme, f
sv jordningsklämma

195-02-32**potentiaalintasausliitin****equipotential bonding terminal**

terminal provided on equipment and intended for the electric connection with a equipotential bonding system

fr	borne d'équipotentialité, f
de	Potentialausgleichsklemme, f
sv	potentialutjämningsklämma

195-02-33**päämaadoitusliitin****päämaadoituskisko****main earthing terminal****main earthing busbar****main grounding terminal, US****main grounding busbar, US**

terminal or busbar that is part of the earthing arrangement of an installation and enabling the electric connection of a number of conductors used for earthing or bonding purposes

fr	borne principale de terre, f
de	Haupterdungsklemme, f; Haupterdungsschiene, f
sv	huvudjordningskena; jordbock

195-02-34**maadoituskytkin****earthing switch****grounding switch, US**

mechanical switching device for earthing parts of an electric circuit, capable of withstanding for a specified duration electric currents under abnormal conditions, but not required to carry electric current under normal operating conditions of the electric circuit

Note 1 to entry: An earthing switch can have a short-circuit making capacity.

fr	connecteur de terre, m; DÉCONSEILLÉ: sectionneur de terre, m
de	Erdungsschalter, m
sv	jordningskopplare

195-02-35
kotelointi**enclosure**

See [IEV 151-13-08](#)

[housing affording the type and degree of protection suitable for the intended application]

fr enveloppe, f
de Umhüllung, f
sv kapsling

195-02-36
POISTETTU**195-02-37**
suoja**screen**
shield, US

See [IEV 151-13-09](#)

[device intended to reduce the penetration of an electric, magnetic or electromagnetic field into a given region]

fr écran, m
de Schirm, m
sv skärm

195-02-38
sähköinen suoja**conductive screen**
conductive shield, US

screen of conductive material intended to reduce the penetration of an electric field

fr écran conducteur, m
de leitfähiger Schirm, m
sv ledande skärm

195-02-39
magneettinen suoja**magnetic screen**

See [IEV 151-13-11](#)

[screen of ferromagnetic or ferrimagnetic material intended to reduce the penetration of a magnetic field into a given region]

fr écran magnétique, m
de magnetischer Schirm, m
sv magnetisk skärm

195-02-40
sähkömagneettinen suoja**electromagnetic screen**

See [IEV 151-13-12](#)

[screen of conductive material intended to reduce the penetration of a time-varying electromagnetic field into a given region]

fr écran électromagnétique, m
de elektromagnetischer Schirm, m
sv elektromagnetisk skärm

195-02-41
käyttöeristys**functional insulation**

insulation between conductive parts, necessary for the proper functioning of the equipment

fr isolation fonctionnelle, f
de Funktionsisolierung, f
sv funktionsisolering

195-02-42
suojapotentiaalintasausliitin**protective bonding terminal**

equipotential bonding terminal intended for protective-equipotential-bonding

fr borne d'équipotentialité de protection, f
de Schutzpotentialanschlussklemme, f
sv skyddsutjämningsklämma

195-02-43
suojaliitin**protective terminal**

terminal provided on equipment and intended for the electric connection with a protective conductor

fr	borne de protection, f
de	Schutzleiterklemme, f
sv	skyddsledarklänna

EHDOTUS

195-03 Sähköisku ja kynnysvirrat 195-03 Electric shock and threshold currents

195-03-01 sähköpalovamma

electric burn

burning of the skin or an organ caused by an electric current along its surface or through it

fr	brûlure électrique, f
de	elektrische Verbrennung, f
sv	elektrisk brännskada

195-03-02 lihaskouristus

electrical tetanization

maximal or nearly maximal muscular contraction caused by electrical stimulation

Note 1 to entry: Continuous tetanization can be produced by electric stimuli repeated at intervals of duration shorter than that of the tetanization produced by a single stimulus.

SOURCE: [IEV 891-01-12](#)

fr	tétanisation électrique, f
de	elektrische Tetanisierung, f
sv	muskelkramp; tetanisering

195-03-03 lihasvärinä

fibrillation

muscular twitching involving individual muscle fibres acting without coordination

SOURCE: [IEV 891-01-13](#)

fr	fibrillation, f
de	Fibrillation, f; Flimmern, n
sv	fibrillation

195-03-04
sydänvärinä**cardiac fibrillation**

fibrillation of the muscles of one or more heart chambers, leading to a disturbance of cardiac function

SOURCE: [IEV 891-01-14](#)

fr	fibrillation cardiaque, f
de	Herzflimmern, n
sv	hjärtflimmer

195-03-05
sydänkammiovärinä**ventricular fibrillation, <protection against electric shock>**

cardiac fibrillation, limited to the ventricles, resulting in the loss of the cardiac pumping function

SOURCE: [IEV 891-01-16](#), modified – In the definition the words "leading to ineffective circulation and then to heart failure" have been replaced by "resulting in the loss of the cardiac pumping function".

fr	fibrillation ventriculaire, <protection contre les chocs électriques> f
de	Herzkammerflimmern, <Schutz gegen elektrischen Schlag> n
sv	ventrikelflimmer

195-03-06
tappava sähköisku**electrocution**

fatal electric shock

fr	électrocution, f
de	tödlicher elektrischer Schlag, m
sv	dödande elchock

195-03-07
kynnysvirta**perception-threshold-current**

value of the minimum electric current through the human body or livestock that causes any sensation for that human being or livestock

fr	seuil de perception du courant, m
de	Wahrnehmungs-Schwellenstrom, m
sv	minsta förnimbara ström

195-03-08**kouristuskyynnys****tetanization threshold current**

for a stated frequency and wave form, the value of the minimum electric current for which an insuperable, involuntary, sustained muscular contraction is produced

SOURCE: [IEV 891-02-70](#), modified – In the definition the words "minimum value of" is replaced by "the value of the minimum".

fr	seuil de tétanisation, m
de	Tetanisierungs-Schwellenstrom, m
sv	tetaniseringströskel

195-03-09**kouristusraja****let-go threshold current**

value of the maximum electric current through the human body at which that human being can release himself or herself

SOURCE: [IEV 891-02-69](#), modified – The synonym has been removed and in the definition the words "maximum value of" have been replaced by "value of the maximum" and the words "at which an adult person holding reference electrodes can let go of the electrodes" have been replaced by "through the human body at which that human being can release himself or herself".

fr	limite de lâcher, f; seuil de non-lâcher, m
de	Loslass-Schwellenstrom, m
sv	släppström

195-03-10**kammiovärinäkyynnys****threshold of ventricular fibrillation****ventricular fibrillation threshold current**

value of the minimum electric current that causes ventricular fibrillation

Note 1 to entry: Ventricular fibrillation stops blood circulation.

SOURCE: [IEV 891-02-72](#), modified – The second preferred term has been modified, the words "minimum value of" have been replaced by "value of the minimum" and a note to entry has been added.

fr	seuil de fibrillation ventriculaire, m
de	Herzkammerflimmern-Schwellenstrom, m
sv	ventrikelflimmertröskel

195-04 Toiminta
195-04 Operation**195-04-01**
ammattihenkilö
sähköalan ammattihenkilö**skilled person**
electrically skilled person

person with relevant education and experience to enable him or her to perceive risks and to avoid hazards that electricity can create

fr personne qualifiée, f; personne qualifiée en électricité, f
de Elektrofachkraft, f
sv fackkunnig person

195-04-02
opastettu henkilö
sähköalan opastettu henkilö**instructed person**
electrically instructed person

person adequately advised or supervised by electrically skilled persons to enable him or her to perceive risks and to avoid hazards that electricity can create

fr personne avertie, f; personne avertie en électricité, f
de elektrotechnisch unterwiesene Person, f; instruierte Person, f CH
sv instruerad person

195-04-03
maallikko**ordinary person**

person who is neither a skilled person nor an instructed person

fr personne ordinaire, f
de Laie, m
sv ordinär person

195-04-04
sähkötila**restricted access area**

area accessible only to electrically skilled persons and electrically instructed persons with the proper authorization

fr zone d'accès limité, f
de Bereich mit eingeschränkter Zugangsberechtigung, m
sv driftrum

195-04-05**järjestelmän nollapisteen maadoitustapa****neutral point treatment**

manner of electric connection of the neutral point to local earth

EXAMPLE The connection to local earth can be direct or via an impedance.

fr	régime de neutre, m
de	Neutralpunktbehandlung, f
sv	neutralpunktsjordning

195-04-06**suoraan maadoitettu järjestelmä****solidly earthed system****solidly grounded system, US**

system in which at least one live part is earthed directly

fr	réseau directement à la terre, m
de	starr geerdetes Netz, n
sv	direktjordat system

195-04-07**eristetty järjestelmä****isolated system**

system in which no live part is intentionally earthed, except for high impedance connections for protection or measurement purposes

fr	réseau isolé, m
de	isoliertes Netz, n
sv	isolerat system

195-04-08**impedanssimaadoitettu järjestelmä****impedance earthed system****impedance grounded system, US**

system in which at least one live part is earthed through a device having an impedance designed to limit the line-to-earth short-circuit current

fr	réseau de terre impédant, m
de	über eine Impedanz geerdetes Netz, n
sv	impedansjordat system

195-04-09**maasulkukompensoitu järjestelmä****resonant earthed system****resonant grounded system, US**

system in which at least one live part is earthed through a device having an inductance designed to compensate approximately for the line-to earth capacitances in the case of a single line-to-earth fault

EXAMPLE The following are examples of a "resonant earthed system": arc-suppression-coil earthed system, peterson coil earthed system and earth fault compensation system.

fr	réseau de terre compensé par bobine d'extinction, m
de	Netz mit Erdschlusskompensation, n; gelöschtes Netz, n
sv	spoljordat system

195-04-10**syötön automaattinen poiskytkentä****automatic disconnection of supply**

interruption of one or more of the line conductors effected by the automatic operation of a protective device in case of a fault

fr	coupure automatique de l'alimentation, f
de	automatische Abschaltung der Stromversorgung, f; automatische Ausschaltung der Stromversorgung, f AT
sv	automatisk fränkoppling av matning

195-04-11**oikosulku****short-circuit**

See [IEV 151-12-04](#)

[accidental or intentional conductive path between two or more conductive parts forcing the electric potential differences between these conductive parts to be equal to or close to zero]

fr	court-circuit, m
de	Kurzschluss, m
sv	kortslutning

195-04-12**vaiheen ja maan välinen oikosulku****line-to-earth short-circuit**

short-circuit between a line conductor and the Earth, in a solidly earthed system or in an impedance earthed system

Note 1 to entry: The short-circuit can be established, for example, through a protective earthing conductor, an earthing conductor and an earth electrode.

fr	court-circuit phase-terre, m
de	Kurzschluss zwischen Außenleiter und Erde, m
sv	jordslutning

195-04-13**POISTETTU****195-04-14****maasulku****earth fault****ground fault, US**

occurrence of an accidental conductive path between a live part and the Earth

Note 1 to entry: The conductive path can consist of faulty insulation, structures (e.g., poles, scaffoldings, cranes, ladders), or vegetation (e.g. trees, bushes) and can have a significant impedance.

fr	défaut à la terre, m
de	Erdschluss, m
sv	jordfel

195-04-15**johdinkatkeama****johtavuusvika****conductor continuity fault****open circuit fault**

state of an item characterized by the accidental presence of a relatively high impedance between two parts of the same conductive path

fr	défaut série, m; défaut de continuité d'un conducteur, m
de	Leiterunterbrechung, f
sv	ledaravbrott

195-04-16
vaihesulku**line-to-line short-circuit**

short-circuit between two or more line conductors, combined or not with a line-to-earth short-circuit at the same place

fr	court-circuit entre phases, m
de	Kurzschluss zwischen Außenleitern, m
sv	flerfasig kortslutning

EHDOTUS

195-05 Jännitteet ja virrat 195-05 Voltages and currents

195-05-01 pääjännite

line-to-line voltage

voltage between two line conductors at a given point in an electric circuit

Note 1 to entry: A definition restricted to polyphase systems is given in [IEV 141-03-06](#).

fr	tension entre phases, f
de	Außenleiterspannung, f
sv	huvudspänning

195-05-02 vaihejännite

line-to-neutral voltage

voltage between a line conductor and the neutral conductor at a given point in an AC circuit

Note 1 to entry: A definition restricted to polyphase systems is given in [IEV 601-01-30](#).

fr	tension phase-neutre, f
de	Spannung Außenleiter - Neutralleiter, f
sv	fasspänning

195-05-03 vaiheen ja maan välinen jännite

line-to-earth voltage line-to-ground voltage, US

voltage between a line conductor and reference earth at a given point in an electric circuit

Note 1 to entry: A definition restricted to polyphase systems is given in [IEV 601-01-31](#).

fr	tension phase-terre, f
de	Spannung Außenleiter Erde, f
sv	spänning till jord

195-05-04
nollapistejännite**neutral-point displacement voltage**

voltage between the real or virtual neutral point and reference earth

fr tension de déplacement du point neutre, f
de Neutralpunkt-Verlagerungsspannung, f
sv neutralpunktsspänning

195-05-05
oikosulkujännite maahan**voltage to earth during a short-circuit**
voltage to ground during a short-circuit, US

voltage between a specified point and reference earth, for a given location of the short-circuit and value of short-circuit current

fr tension de court-circuit à la terre, f
de Spannung gegen Erde bei Kurzschluss, f
sv kortslutningsspänning till jord

195-05-06
maasulkujännite maahan**voltage to earth during an earth fault**
voltage to ground during a ground fault, US

voltage between a specified point and reference earth, for a given location of the earth fault and a given value of earth fault current

fr tension de défaut à la terre, f
de Spannung gegen Erde bei Erdschluss, f
sv jordfelsspänning

195-05-07
maadoitusjohtimen jännite <maahan>**earthing-conductor voltage, <to earth>**
grounding-conductor voltage, <to ground> US

voltage between the earthing conductor and reference earth

fr potentiel du conducteur de terre, <mettre à la terre> m; potentiel du conducteur de mise à la terre, m
de Erdungsleiterspannung, <zur Erde> n
sv jordningsledarspänning, <till jord>

195-05-08**maanpinnan jännite** <maahan>**earth-surface voltage**, <to earth>**ground-surface voltage**, <to ground> US

voltage between a specified point on the Earth's surface and reference earth

fr potentiel du sol, <par rapport à la terre> m
de Erdoberflächenspannung, <zur Erde> n
sv markpotential till jord

195-05-09**suurin koketusjännite****prospektiivinen kosketusjännite****prospective touch voltage**

voltage between simultaneously accessible conductive parts when those conductive parts are not being touched by a human being or livestock

fr tension de contact présumée, f; tension de toucher présumée, f
de unbeeinflusste Berührungsspannung, f
sv förväntad beröringsspänning

195-05-10**kosketusjännitteen jatkuva sallittu enimmäisarvo****conventional touch voltage limit**

value of the maximum prospective touch voltage that is permitted to be maintained indefinitely at specified conditions of external influences

fr tension limite conventionnelle de contact, f; tension limite conventionnelle de toucher, f
de vereinbarter Grenzwert der unbeeinflussten Berührungsspannung, m
sv villkorad beröringsspänning

195-05-11**kosketusjännite****touch voltage**, <effective>

voltage between conductive parts when touched simultaneously by a human being or livestock

Note 1 to entry: The value of the touch voltage is influenced by the impedance of the human being or the livestock in electric contact with these conductive parts.

fr tension de contact, <effective> f
de Berührungsspannung, f
sv beröringsspänning

195-05-12
askeljännite**step voltage**

voltage between two points on the Earth's surface

Note 1 to entry: Typically, a distance of 1 m between the two points is considered to be the stride length of a human being.

fr	tension de pas, f
de	Schrittspannung, f
sv	stegspänning

195-05-13
signaalikosketusjännite**signal-touch-potential**

electric potential on a live part intended to be touched by a person for signal or control purposes

fr	potentiel de contact, m
de	Signal-Berührungspotential, n
sv	signalberöringsspänning

195-05-14
maasulkukerroin**earth fault factor**
ground fault factor, US

ratio of the highest root-mean-square value of line-to-earth power frequency voltage on a healthy line conductor at a given location of a three-phase system, and for a given system configuration, during an earth fault affecting one or more line conductors at any point on the system, to the root-mean-square value of the power frequency of the line-to-earth voltage that would be obtained at the given location in the absence of any such earth fault

fr	facteur de court-circuit à la terre, m
de	Erdschlussfaktor, m
sv	jordfelsfaktor

195-05-15
vuotovirta**leakage current**

electric current in an unintended conductive path under normal conditions

fr	courant de fuite, m
de	Ableitstrom, m
sv	läckström

195-05-16**hajavirta****stray current**, <in electrical installations and equipment>

leakage current in the Earth or in metallic structures buried in the ground and resulting from their intended or unintended earthing

fr	courant vagabond, <en installations et matériels électriques> m
de	Streustrom, m
sv	vagabonderande ström

195-05-17**osaoikosulkuvirta****partial short-circuit current**

electric current at a given point of a network resulting from a short-circuit at another point of the same network

fr	courant partiel de court-circuit, m
de	Teilkurzschlussstrom, m
sv	partiell kortslutningsström

195-05-18**oikosulkuvirta****short-circuit current**

electric current in a given short-circuit

fr	courant de court-circuit, m
de	Kurzschlussstrom, m
sv	kortslutningsström

195-05-19**johdinkatkoksen osavikavirta****partial conductor continuity fault current**

electric current at a given point of a network and resulting from a conductor continuity fault at another point of the same network

fr	courant partiel de défaut série, m
de	Teilstrom bei Leiterunterbrechung, m
sv	partiell felström

195-05-20**johdinkatkoksen vikavirta****conductor continuity fault current**

electric current in the impedance causing the conductor continuity fault

fr	courant de défaut série, m
de	Strom bei Leiterunterbrechung, m
sv	ström i felställe

195-05-21**kosketusvirta****touch current**

electric current passing through a human body or through livestock when it touches one or more accessible parts of an installation or of equipment

fr	courant de contact, m
de	Berührungsstrom, m
sv	beröringsström

195-05-22**suojajohtimen virta****protective conductor current**

electric current appearing in a protective conductor, such as leakage current or electric current resulting from an insulation fault

fr	courant dans le conducteur de protection, m
de	Schutzleiterstrom, m
sv	skyddsledarström

195-05-23**maasulkuvirta****earth fault current****ground fault current, US**

current flowing to earth due to an insulation fault

fr	courant de défaut à la terre, m
de	Erdfehlerstrom, m
sv	jordfelsström

195-05-24
pienoisjännite**extra-low voltage**
ELV

voltage not exceeding the maximum value of the prospective touch voltage that is acceptable to be maintained indefinitely under specified conditions of external influences

fr très basse tension, f; TBT, f
de Kleinspannung, f; ELV
sv klenspänning

195-05-25
pienjännite**low voltage**
LV

voltage not exceeding a conventionally adopted limit

Note 1 to entry: For AC, the conventionally adopted limit is 1 000 V.

Note 2 to entry: For DC, the conventionally adopted limit is 1 500 V.

fr basse tension, f; BT, f
de Niederspannung, f; LV
sv lågspänning

195-05-26
suurjännite**high voltage**
HV

voltage exceeding the conventionally adopted limit for low voltage

fr haute tension, f; HT, f
de Hochspannung, f; HV
sv högspänning

195-06 Sähköturvallisuuden suojausmenetelmät
195-06 Protective measures for electrical safety**195-06-01**
perussuojaus**basic protection**

protection against electric shock under normal conditions

fr protection principale, f
de Basisschutz, m
sv basskydd

195-06-02
vikasuojaus**fault protection**

protection against electric shock under single fault conditions

fr protection en cas de défaut, f
de Fehlerschutz, m
sv felskydd

195-06-03
suora kosketus**direct contact**

electric contact of human beings or livestock with live parts

fr contact direct, m
de direktes Berühren, n
sv direkt beröring

195-06-04
epäsuora kosketus**indirect contact**

electric contact of human beings or livestock with exposed-conductive-parts that have become live under fault conditions

fr contact indirect, m
de indirektes Berühren, n
sv indirekt beröring

195-06-05**vaarallinen jännitteinen osa****hazardous-live-part**

live part that, under certain conditions, can give a harmful electric shock

Note 1 to entry: A hazardous voltage can be present on the accessible surface of solid insulation. In such a case, this surface is considered to be a hazardous-live-part

fr partie active dangereuse, f; partie sous tension dangereuse, f
de gefährliches aktives Teil, n
sv farlig spänningssatt del

195-06-06**peruseristys****basic insulation**

insulation that provides basic protection

Note 1 to entry: This concept does not apply to insulation used exclusively for functional purposes.

fr isolation principale, f
de Basisisolierung, f
sv grundläggande isolering

195-06-07**lisäeristys****supplementary insulation**

independent insulation applied in addition to basic insulation, that provides fault protection

fr isolation supplémentaire, f
de zusätzliche Isolierung, f
sv tilläggsisolering

195-06-08**kaksoiseristys****double insulation**

insulation comprising both basic insulation and supplementary insulation

fr double isolation, f
de doppelte Isolierung, f
sv dubbel isolering

195-06-09
vahvistettu eristys**reinforced insulation**

insulation that provides a degree of protection against electric shock equivalent to double insulation

Note 1 to entry: Reinforced insulation can comprise several layers that cannot be tested singly as basic insulation or supplementary insulation.

fr	isolation renforcée, f
de	verstärkte Isolierung, f
sv	förstärkt isolering

195-06-10
jännitteelle altis osa**exposed-conductive-part**

conductive part of equipment that can be touched and that is not live under normal conditions, but that can become live when basic insulation fails

fr	partie conductrice accessible, f; masse, <dans une installation> f
de	Körper, m
sv	utsatt del

195-06-11
muu johtava osa**extraneous-conductive-part**

conductive part not forming part of the electrical installation and that is likely to introduce an electric potential, generally the electric potential of a local earth

fr	élément conducteur étranger, m
de	fremdes leitfähiges Teil, n
sv	främmande ledande del

195-06-12
kosketusetäisyys**arm's reach**

zone of accessibility to touch extending from any point on a surface where persons usually stand or move about to the limits that a person can reach with the hand, in any direction, without assistance

Note 1 to entry: The extent of arm's reach depends on the nature of the product or the installation and their intended use.

fr	volume d'accessibilité au toucher, m
de	Handbereich, m
sv	armräckvidd

195-06-13
sähköinen kotelointi**electrical enclosure**

enclosure providing protection against the foreseen dangers created by electricity

fr	enveloppe électrique, f
de	elektrische Umhüllung, f
sv	elektrisk kapsling

195-06-14
<sähköisesti> suojaava kotelointi**protective enclosure, <electrically>**

electrical enclosure surrounding internal parts of equipment to prevent access to hazardous-live-parts from any direction

fr	enveloppe de protection, <électrique> f
de	elektrische Schutzumhüllung, f; Schutzumhüllung, <elektrisch> f
sv	skyddskapsling, <elektrisk>

195-06-15
kosketussuojus
suoja**protective barrier, <electrically>**

part providing protection against contact by a human being or livestock with hazardous-live-parts from any usual direction of access

fr	barrière de protection, <électrique> f
de	elektrische Schutzabdeckung, f; Schutzabdeckung, <elektrisch> f
sv	skyddsbarriär, <elektrisk>

195-06-16
kosketuseste
este**protective obstacle, <electrically>**

part preventing unintentional contact by a human being or livestock with hazardous-live-parts, but not preventing such contact by deliberate action

fr	obstacle de protection, <électrique> m
de	elektrisches Schutzhindernis, n; Schutzhindernis, <elektrisch> n
sv	skyddshinder, <elektrisk>

195-06-17**sähkökosketuksen suoja****protective screen**, <electrically>**protective shield**, <electrically> US

conductive screen used to separate an electric circuit and/or conductors from hazardous-live-parts

fr écran de protection, <électrique> m

de elektrischer Schutzschirm, m; Schutzschirm, <elektrische> m

sv skyddsskärm, <elektriskt ledande>

195-06-18**suojaus sähkökosketukselta****protective screening**, <electrically>**protective shielding**, <electrically> US

separation of electric circuits and/or conductors from hazardous-live-parts by an electrically protective screen connected to the protective equipotential bonding system and intended to provide protection against electric shock

fr protection par écran, <électrique> f

de elektrische Schutzschirmung, f; Schutzschirmung, <elektrisch> f

sv skyddsskärmning, <elektriskt ledande>

195-06-19**suojaerotus****protective separation**, <electrically>

separation of one electric circuit from another by means of basic protection and fault protection

fr séparation de protection, <électrique> f

de elektrisch sichere Trennung, f; sichere Trennung, <elektrisch> f

sv skyddsseparation, <elektrisk>

195-06-20**rajoittava virtalähde****limited-current source**

device supplying electric energy to an electric circuit:

- with a steady-state current and an electric charge limited to non-hazardous levels, and
- equipped with electrically protective separation between the output of the device and any hazardous-live part

fr source à courant limité, f

de Stromquelle mit begrenztem Strom, f

sv strömbegränsad matning

195-06-21
eristävä ympäristö**non-conducting environment**

environment with high impedance to earth and without any earthed conductive parts

Note 1 to entry: Insulated walls and floors are providing a high impedance to earth

fr	environnement non conducteur, m
de	nicht leitende Umgebung, f
sv	isolerad miljö

195-06-22
lisäsuojaus**additional protection**

protection against electric shock in addition to basic protection and/or fault protection

fr	protection complémentaire, f
de	zusätzlicher Schutz, m
sv	tilläggsydd

195-06-23
erottaminen**isolation**

disconnection providing adequate insulation between electrical equipment, a system, an installation or part of an installation and their energy sources

fr	isolement, m
de	Isolation, f
sv	frånskiljning

195-06-24
kosketeltava osa**accessible part**

part that can be touched by means of the standard test finger

fr	partie accessible, f
de	berührbares Teil, n
sv	berörbar del

195-06-25**suojakeino** <sähköiskuilta>**protective provision**, <protection against electric shock>

independent provision intended to protect against electric shock under specified conditions

fr	disposition de protection, <protection contre les chocs électriques> f
de	Schutzvorkehrung, <Schutz gegen elektrischen Schlag> f
sv	skyddsmetod, <skydd mot elchock>

195-06-26**suojausmenetelmä** <sähköiskuilta>**protective measure**, <protection against electric shock>

appropriate combination of protective provisions

fr	mesure de protection, <protection contre les chocs électriques> f
de	Schutzmaßnahme, <Schutz gegen elektrischen Schlag> f
sv	skyddsåtgärd, <skydd mot elchock>

195-06-27**tehostettu suojakeino****enhanced protective provision**

protective provision having a reliability of protection not less than that provided by two independent protective provisions

fr	disposition de protection renforcée, f
de	verstärkte Schutzvorkehrung, f
sv	förstärkt skyddsmetod, <skydd mot elchock>

195-06-28**SELV-järjestelmä****SELV system**

electric system in which the voltage cannot exceed the value of extra-low voltage:

- under normal conditions and
- under single fault conditions, including earth faults in other electric circuits

Note 1 to entry: SELV is the abbreviation for safety extra-low voltage.

fr	schéma TBTS, m
de	SELV-System, n
sv	SELV-system

195-06-29
PELV-järjestelmä**PELV system**

electric system in which the voltage cannot exceed the value of extra-low voltage:

- under normal conditions and
- under single fault conditions, except earth faults in other electric circuits

Note 1 to entry: PELV is the abbreviation for protective extra-low voltage schéma

fr	TBTP, m
de	PELV-System, n
sv	PELV-system

195-06-30
yksinkertainen erotus**simple separation**

separation between electric circuits or between an electric circuit and local earth by means of basic insulation

fr	séparation simple, f
de	einfache elektrische Trennung, f
sv	enkel separation

195-06-31
sähköinen erotus**electrical separation**

galvanic separation and insulation of hazardous-live-parts and the insulation of exposed-conductive-parts from other electric circuits and earth

fr	séparation électrique, f
de	elektrische Schutztrennung, f
sv	galvanisk separation

195-06-32**samanaikaisesti kosketeltavat osat****simultaneously accessible parts**

conductive parts that can be touched simultaneously by a human being or by livestock

Note 1 to entry: Simultaneously accessible parts can be:

- live parts,
- exposed-conductive-parts,
- extraneous-conductive-parts,
- protective conductors,
- soil or conductive floor.

fr parties simultanément accessibles, f
de gleichzeitig berührbare leitfähige Teile, n pl
sv samtidigt berörbara delar

195-06-33**suojaus rajoittamalla vakaan tilan kosketusjännitettä ja sähkövarausta****protection by limitation of steady-state touch current and electric charge**

protection against electric shock by electric circuit or equipment design so that, under both normal conditions and fault conditions, the steady-state current and electric charge are limited to below a hazardous level

fr protection par limitation du courant permanent et de la charge électrique, f
de Schutz durch Begrenzung des Beharrungsstromes und der elektrischen Ladung, m
sv skydd genom begränsning av stadigvarande beröringsström och elektrisk laddning

195-06-34**suojavastus****protective impedance device**

component or assembly of components whose impedance and construction limit steady-state touch current and electric charge to non-hazardous levels

fr impédance de protection, f
de Schutzimpedanzeinrichtung, f
sv skyddsimpedans

195-06-35**luokan I laite****class I equipment**

equipment with at least one provision for basic protection and with means for protective-equipotential-bonding for fault protection

fr	matériel de classe I, m
de	Betriebsmittel der Schutzklasse I, n
sv	elmaterial av klass I

195-06-36**luokan II laite****class II equipment**

electrical equipment where basic protection and fault protection are provided by double insulation or reinforced insulation

fr	matériel de classe II, m
de	Betriebsmittel der Schutzklasse II, n
sv	elmaterial av klass II

195-06-37**luokan III laite****class III equipment**

electrical equipment in which voltages are limited to extra-low voltage values as the provision for basic protection, and with no provision for fault protection

fr	matériel de classe III, m
de	Betriebsmittel der Schutzklasse III, n
sv	elmaterial av klass III