



Protection Against Touch Voltage

High-voltage-resistant, insulated CUI Conductor





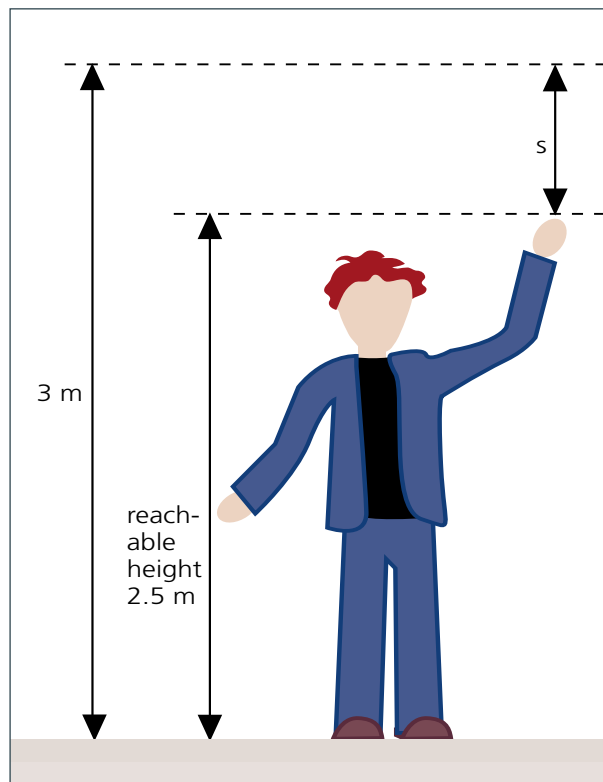
Protection against hazard of touch voltage in case of lightning strike



The CUI Conductor reduces the hazard of touch voltage

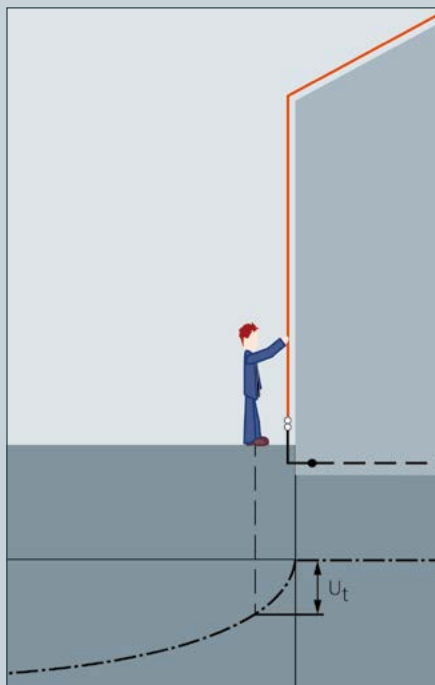
Touch voltage on a bare down conductor in the event of a lightning strike can be life-threatening because a part of the current flows from the hand through the body into the ground. Risk of touch voltage exists especially in case of highly frequented places, such as shopping centres, schools, nursery schools, theatres, cinemas if bare down conductors are installed in the entrance area. This hazard also exists in case of especially exposed publically accessible shelters and look-outs.

Touching a bare down conductor during a lightning strike means life hazard – even if the lightning protection system is according to the standards. The area up to a distance of three meters from the building and a typical height of three meters is considered as hazard area, as this is the maximum reachable height of a person with raised hand plus an additional separation distance s . Within this range insulated down conductors should be installed.

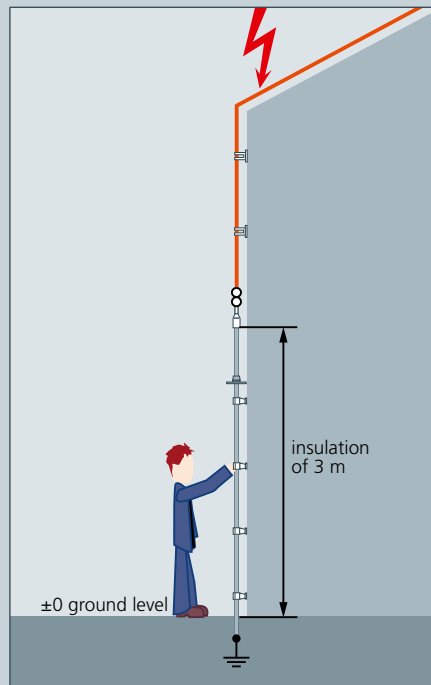


The CUI Conductor has a high-voltage resistant insulation which reduces the hazard of touch voltage.

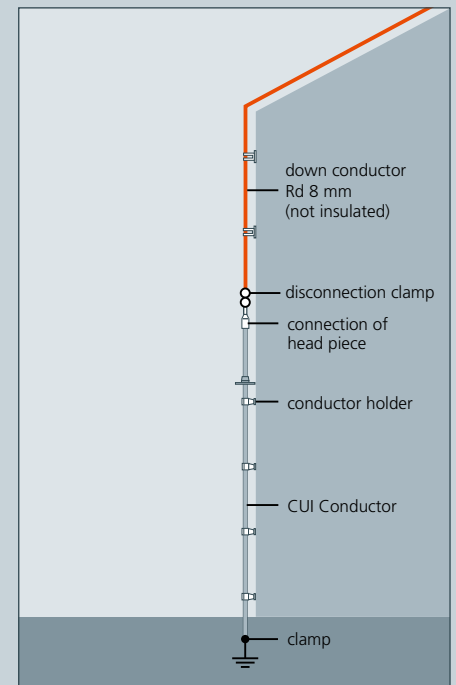
It can be easily mounted and fixed at the facade by means of the conductor holders.



Basic diagram touch voltage U_t



Protection measures



CUI Conductor installed at a wall

Measures against touch voltage

The hazard that a person is injured when touching the down conductor can be reduced by the following measures in accordance with IEC 62305-3, section 8.1*:

- Insulation of down conductor by at least 3 mm cross-linked polyethylene with an impulse withstand voltage of 100 kV, 1.2/50 μ s.
- The down conductors are not installed in the entrance area of a building.
- Warning notices to minimise the probability of down conductors being touched. Also physical restrictions can be a solution.
- The contact resistance of the surface layer of the soil, within 3 meters of the down conductor, is not less than 100 k Ω .
- A layer of insulating material, e.g. asphalt, of 5 cm thickness generally reduces the hazard.

It also can be hazardous to touch a rain down pipe even if it is not used as down conductor. In this case the metal pipe shall be replaced by a PVC pipe up to a height of 3 meters.

The CUI Conductor protects against touch voltage

The protection measures against touch voltage are not in any case a sufficient protection against physical injury. The requirement of a down conductor sheathing with a high-voltage-resistant insulation, for example, is not enough if there are no complementary measures against creeping flashover at the insulation surface. Also environmental influences such as rain have to be considered.

In order to exclude the risk of physical injury due to touch voltage, puncturing of the high-voltage-resistant insulation and a creeping flashover on the insulation has to be avoided.

The DEHN CUI Conductor fulfils the requirements of dielectric strength and of resistance to creeping flashover – and thus protects from hazardous touch voltage.

* IEC 62305-3 „Protection against lightning“

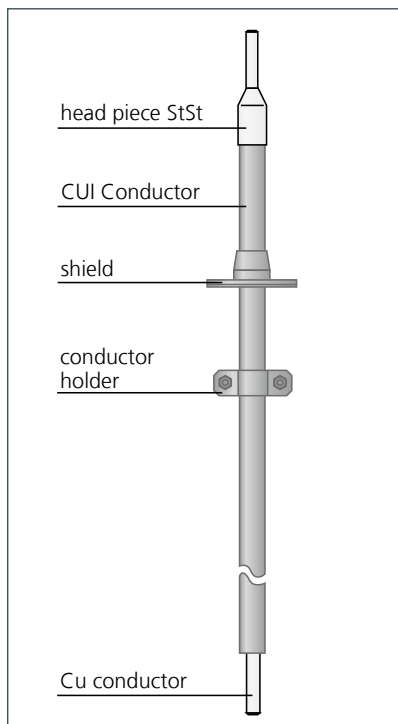


Design with copper inner conductor and cross-linked polyethylene insulation

The pre-assembled solution

The CUI Conductor is available as pre-assembled solution, consisting of

- the head piece (StSt)
- the CUI Conductor with high-voltage-resistant insulation
- the plastic shield



Structure of CUI Conductor

The copper inner conductor is sheathed with an insulating layer of high-voltage-resistant cross-linked polyethylene. The insulating layer is protected against external influences by an additional thin layer of polyethylene

The shield provides a sufficiently dry zone which prevents creeping flashovers at the insulation surface.

The insulated down conductor must be installed over the entire hazard area. That means the CUI Conductor has to be installed vertically up to a height of 3 meters above ground level. The upper end of the conductor has to be connected with the air-termination conductor, the lower end with the earth-termination system by means of a clamp.

CUI Conductor as pre-assembled solution



Pre-assembled solution

The CUI Conductor is available in 2 lengths: 3.5 meters and 5 meters

Technical data	Part No. 830 208
Material of conductor	Copper
Material of insulation	Cross-linked polyethylene
Impulse withstand voltage (1.2/50 μ s)	100 kV
Outer \varnothing of conductor	20 mm
Standard	EN 62561-2*
Colour of conductor	light grey
Cross section of conductor	50 mm ²
Total length	3500 mm

Technical data	Part No. 830 218
Material of conductor	Copper
Material of insulation	Cross-linked polyethylene
Impulse withstand voltage (1.2/50 μ s)	100 kV
Outer \varnothing of conductor	20 mm
Standard	EN 62561-2*
Colour of conductor	light grey
Cross section of conductor	50 mm ²
Total length	5000 mm

* EN 62561-2 „Lightning protection system components (LPSC) - Part 2: Requirements for conductors and earth electrodes“

Accessories for the CUI Conductor

Conductor holders

For the installation of the CUI Conductor at walls or facades, plastic or metal conductor holders are used.



Technical data	Part No. 275 220
Height	19 mm
Material of conductor holder	Polyamide
Conductor holder support of round wire	20 mm
Female thread	M8
Fixing bore	ø 6.5 mm
Screw	🔩 M6 x16 mm



Technical data	Part No. 275 229
Height	10 mm
Material of conductor holder	StSt
Conductor holder support of round wire	20 mm
Fixing bore	ø 6.5 x 16 mm
Screw	🔩⚡ M6 x14 mm



Technical data	Part No. 275 129
Material of conductor holder	NIRO
Conductor holder support of round wire	20 mm
Screw	(2x) ø 6.5 x 8 mm

Tool

The CUI strip 20 tool can be used for stripping the CUI Conductor easily and safely on site.



	Part No.
CUI strip 20	597 320
CUI head 20 (separate head)	597 020

Warning sign

In case of hazard of step and touch voltage, according to IEC/EN 62305-3.
Front German / Back English.



Technical data	Part No. 480 699
Material	Aluminium
Dimensions (l x w x d)	297 x 210 x 0.7 mm
Fixing	(4x) Ø 6.5 mm



**Surge Protection
Lightning Protection
Safety Equipment
DEHN protects.**

DEHN + SÖHNE
GmbH + Co.KG.

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