

## Calculation of the separation distance according to ČSN EN 62305-3: 2006

Customer:	Přestupní uzel hromadné dopravy v Ivančicích - 0.etapa
Project:	Hromosvodní instalace
Project No.:	Ing. Lipovský

### Details on the project:

Determination of the minimum number of down conductors:

Length:	61,00 m
Width:	31,20 m

Circumference:	184,40 m
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Class of LPS selected

LPS III ▼

Minimum number of down conductors regarding lightning protection class

	Calcul. Value	Rounded to even number	Distances determined by class of LPS	Distances for calculated number of down conductors
Down conductors:	12,2933333	12	15,00 m	15,37 m

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1. Class of LPS selected LPS III ▼  $k_i = 0,04$

2. Insulating material Air ▼  $k_m = 1$

3. Vertical distance L in [m]  $L = 5,10 \text{ m}$

L : total effective distance from the point at which the separation distance s is to be calculated to the nearest point of the equipotential bonding.

4. Selection of down conductors, earthing system, air-termination system

n = 4 and more; earthing system Type B; meshed conductors ▼

### Additional entries for earthing systems Type B and n = 2 and more

Down conductors n = **12**  
 Distance c = **15,0 m**  
 Height h = **5,1 m**

$k_c = 0,428219$

### Separation distance

**s = 0,087 m**

at vertical distance L [m] from: **5,1 m**

#### Explanation of factors

$k_i$ : depends on the class of LPS selected

$k_c$ : depends on the lightning current which flows in the down conductors

$k_m$ : depends on the material of the electrical insulation

L : total effective distance from the point at which the separation distance s is to be calculated to the nearest point of the equipotential bonding.

Distance (height) from the equipotential bonding level	Separation distance s
0,5 m	0,009
1,0 m	0,017
1,5 m	0,026
2,0 m	0,034
2,5 m	0,043
3,0 m	0,051
3,5 m	0,060
4,0 m	0,069
4,5 m	0,077
5,0 m	0,086
5,5 m	
6,0 m	
6,5 m	
7,0 m	
7,5 m	
8,0 m	
8,5 m	
9,0 m	
9,5 m	
10,0 m	

Distance (height) from the equipotential bonding level	Separation distance s
10,5 m	
11,0 m	
11,5 m	
12,0 m	
12,5 m	
13,0 m	
13,5 m	
14,0 m	
14,5 m	
15,0 m	
15,5 m	
16,0 m	
16,5 m	
17,0 m	
17,5 m	
18,0 m	
18,5 m	
19,0 m	
19,5 m	
20,0 m	



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*meshed conductors, number of down conductors  $n = 4$  and more*

1. Class of LPS selected: LPS III  $k_i = 0,04$

2. Insulation at the point of proximity: Air  $k_m = 1$

3. Distance  $c$  (for  $h_{01}$  only):

		Distance of the ring conductors [m]	Number of down conductors in segment $n$	$k_c$	Separation distance $s$ [m]	
roof system	$h_{DS}$		2			Stretched wires or cables
	$c_{DS}$					
	$h_F$					air-termination rod
building	$h_{01}$					
	$h_{02}$					
	$h_{03}$					
	$h_{04}$					
	$h_{05}$					
	$h_{06}$					
	$h_{07}$					
	$h_{08}$					
	$h_{09}$					
	$h_{10}$					
Length $L =$		0,00 m		$s$ [m] ( $k_m: 1$ ) = 0,000 m		

## Protective angle of an air-termination rod:

Class of LPS: **LPS III**

Radius of the sphere  $r$  [m]: **45**

Height of the air-termination system [m]: **5**

Protective angle  $\alpha$  [°] **69,6°**  
 (calculation of even surfaces)

