

SOLUTION

Antenna systems

Surge protection of telecommunication



Why to Protect?

The antenna lines are very long for the radio transmission systems, they exceed height of buildings, and directly exposed to the strikes of lightning. Of course, this applies to the antennas alone as well.

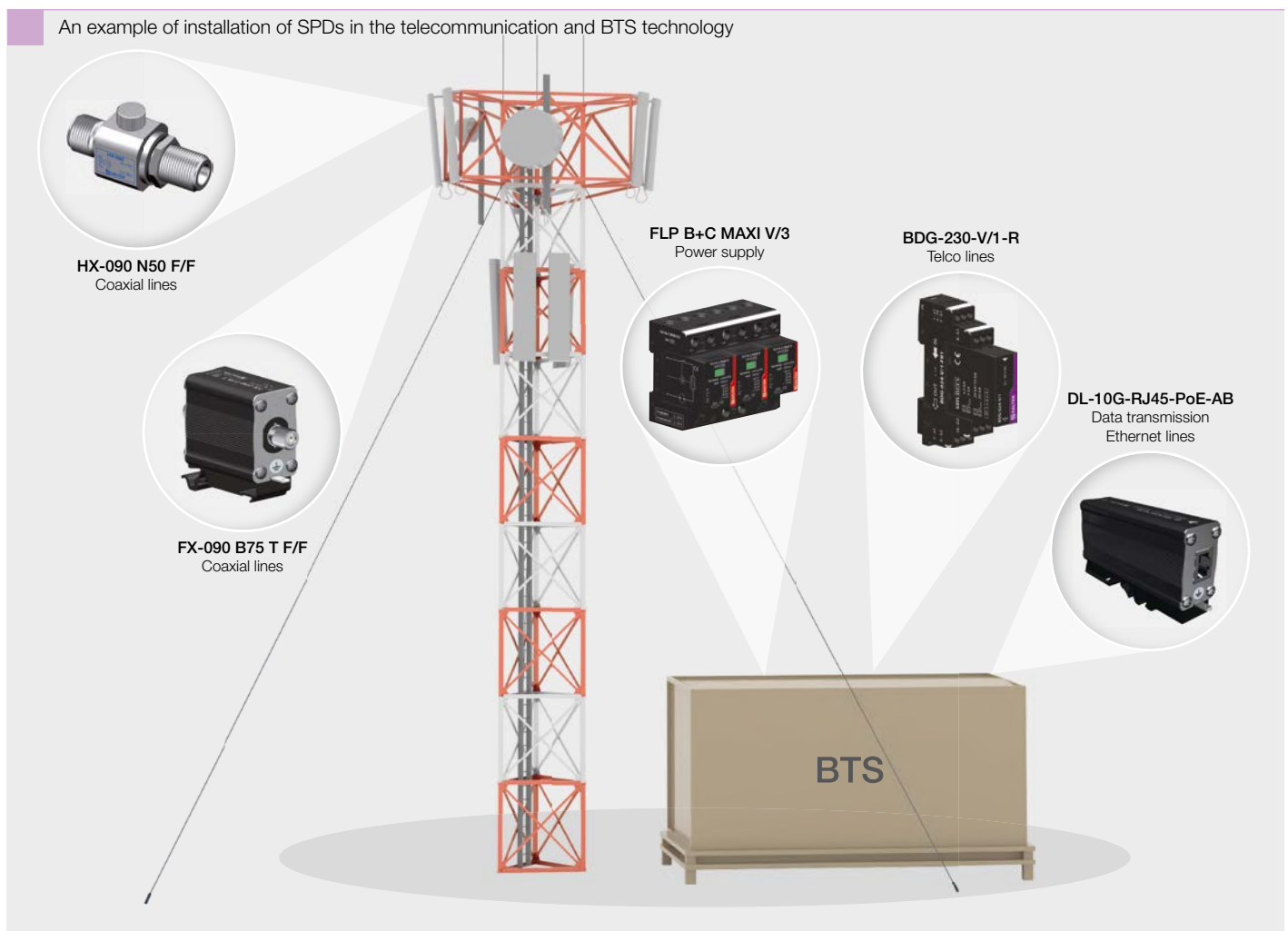
With long coaxial, data, and power supply lines, transient phenomena occur, which induces overvoltage to the line, which may get through the lines down to sensitive interfaces of the technologies and result in damage on the broadcasting and receiving equipment. The surge protection is important both for the radio directional transmission devices and mobile radio systems, as well as

for the surveillance and inspection video systems, or in private area, e.g. satellite and TV receivers.

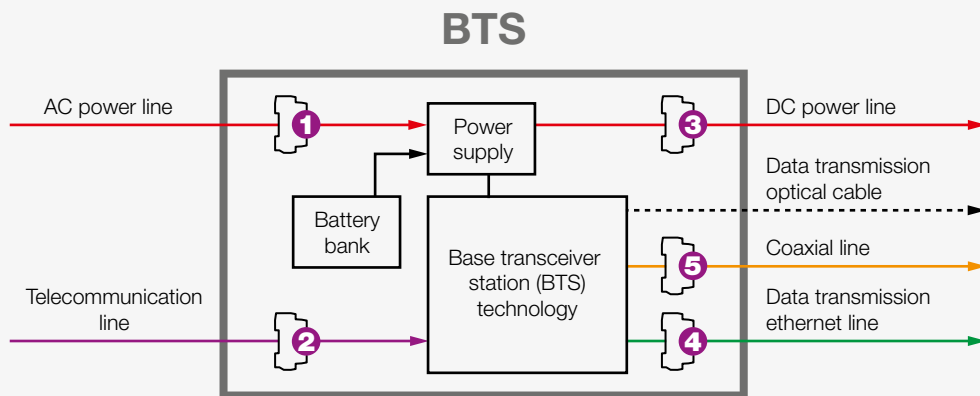
Safety and reliability of the broadcasting and receiving equipment of any type is substantially increased using suitable surge protections in addition to the standard protection against the strike of lightning.

What to Protect?

- BTS low voltage power installation + power back-up supply unit
- HVAC unit for BTS temperature and humidity control
- Coaxial cables for antennas and parabolas with frequencies up to 3,5 GHz
- Ethernet lines for data transmissions among installed technology



General diagram of the surge protection in BTS



Recommended SPDs for telecommunication

FLP-B+C MAXI V/3 ①

Main 230/400 V AC power supply protection to a BTS

Connection	Suitable networks	U_c	I_{imp} (10/350 μ s)	I_n (8/20 μ s)	I_{max} (8/20 μ s)	Remote signalling	Ordering number
3+0	TN-C	275 V AC	25 kA	30 kA	60 kA	No	8595090550938

BDG-230-V/1-R ②

Lightning current arrester for the input of telecommunication line, installed at the line entry to a building or BTS.

Location	Number of lines	U_c	I_L	I_{imp} (D1)	I_n (C2)	U_p (C3)	Floating	Ordering number
ST 1+2+3	1	250 V DC	0.5 A	2.5 kA	10 kA	350 V	No	8595090554189

FLP-B+C MAXI 150 V/1 ③

Lightning current and surge arrester for the protection of the output power supply line to mast located equipment.

Connection	Suitable networks	U_c	I_{imp} (10/350 μ s)	I_n (8/20 μ s)	I_{max} (8/20 μ s)	Remote signalling	Ordering number
1+0	TN	150 V AC	25 kA	30 kA	60 kA	No	8595090558347

DL-10G-RJ45-PoE-AB ④

Ethernet lines and communication devices protection, e.g. microwave links, with high-speed data transmission, and possible PoE powering in A or B mode, installed as closest as possible to the protected device.

Location	Network type	U_c line/PoE	I_L line/PoE	I_n (C2) (8/20 μ s)	U_p (C3) core-core	U_p (C3) core-PE	Ordering number
ST 1+2+3	10G	8.5 / 58 V DC	0.5 / 1.5 A	0.15 kA	60 / 90 V	500 V	8595090561491

HX-090 N50 F/F, FX-090 B75 T F/F ⑤

Lightning current diverters for coaxial lines and devices for direct and indirect strike of lightning.

Location	U_c	I_L	I_{imp} (D1) (10/350 μ s)	I_n (C2) (8/20 μ s)	U_p (C3)	f_{max}	Ordering number
ST 1+2	70 V DC	6 A	2.5 kA	10 kA	600 V	3 500 MHz	8595090534051
ST 1	70 V	4 A	2.5 kA	10 kA	600 V	2 150 MHz	8595090533856

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