

Countermeasure for Lightning Surge

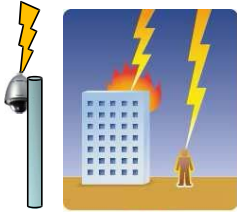
Necessity

Countermeasure for lightning surge is very important to save a life, to reduce a damage of fire disaster on surrounding areas and to protect security cameras, computers and other equipment.

Mechanism

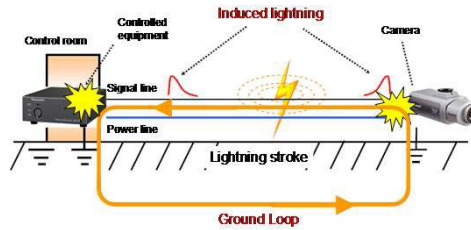
1. Direct lightning stroke

It's a direct lightning stroke to electric equipment and human body. It's high voltage and current and the protector can not always protect equipment from lightning surge



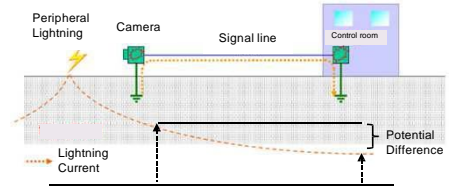
2. Induced lightning

We have experienced some burnt issues on the PCB. Although we can not determine the actual cause, we think that Induced Lightning on Ground Loop is one of the suspected causes.



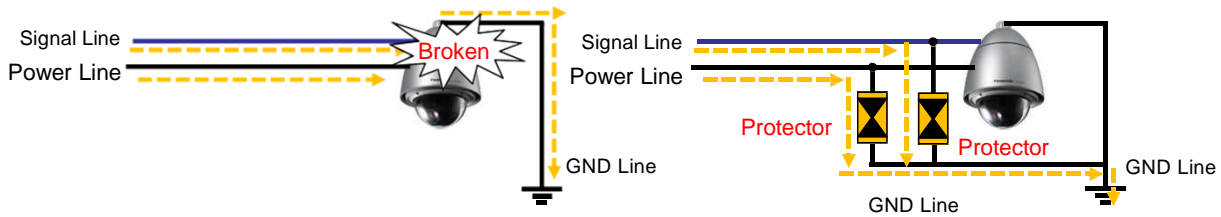
3. Potential difference of GND

When the lightning surge, the current carries to GND. However, in the case of GND line is separated, a potential difference occurs in the GND and then some equipment may be broken.



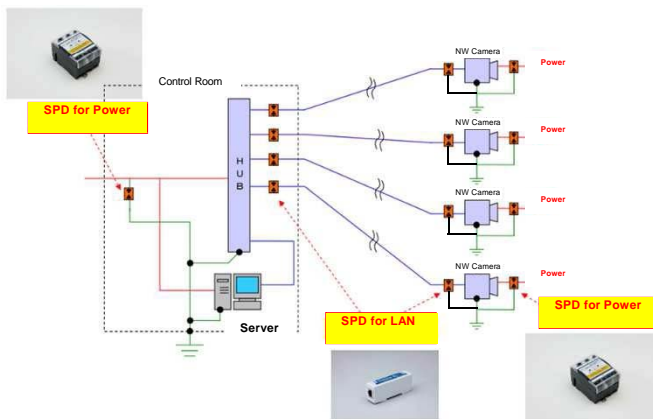
Counter measure

A surge protector offer some protection for electronic devices against high voltage. A surge protector is normally open circuit condition. When it has some high voltage, it becomes short circuit condition. After the high voltage passes, it becomes short circuit condition again.



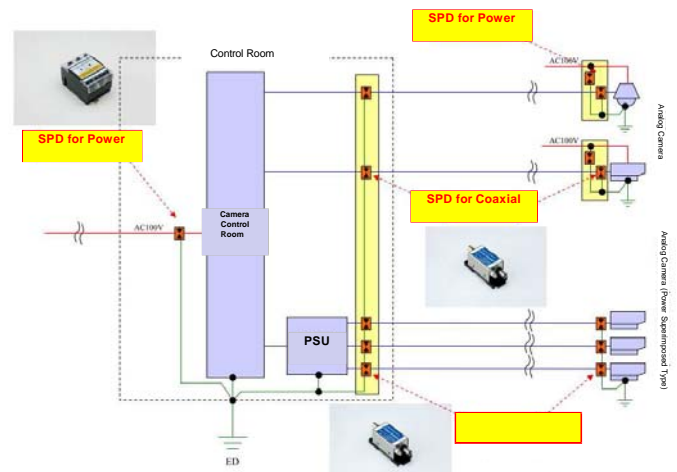
Example of installation

e.g.1) For network camera system








(* SPD : Surge Protection Device)

e.g.2) For analog camera system



[Notice] * A surge protector should be installed on each line which is Signal line and Power line and installed nearby each equipment.

- * Earth should be connected nearby equipment.
- * Connect to GND commonly in the case of installing a number of surge protectors.
- * Check the polar character of surge protectors. There is no effect when it is connected by a wrong direction.
- * Reduce a noise influence from magnetic field by metallic piping or by isolating more than 2m between power line and signal line. (Metallic piping should be connected to GND.)

	LAN cable (PoE+, PoE, normal cable)	Power line (AC24V)	Power line (DC12V)	Coaxial Cable (DC55V, DC12V, video transmission)	Commercial power line (AC100V)
Model No.	LAN-CAT5e-P+II	ZP-K2	ZP-DC24	CX-E-ECS	MKYS2
Appearance					
Supplier	Sankosha Corporation				

Supplier : Sankosha Corporation

URL : <http://www.sankosha.co.jp/en/>

[Notice] * Check the performance of system after installing some surge protectors.
 * This performance is confirmed under the condition of normal operation.
 It is not guaranteed for a performance of lightning protection.
 * Surge protector is only one countermeasure to reduce some lightning damage. It cannot be always protected from all lightning surge.