

STORMIN PROTECTION PRODUCTS INC.

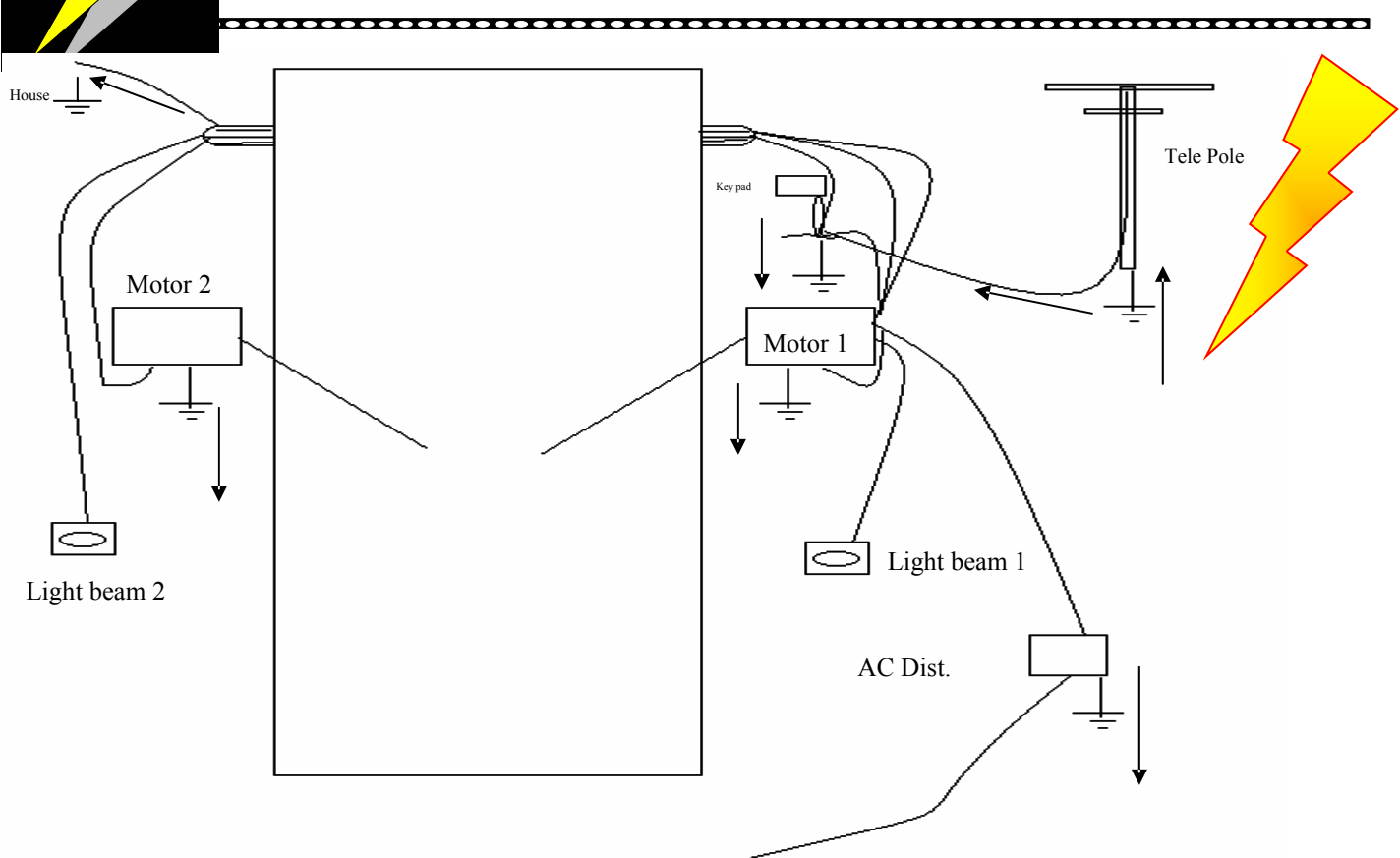
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TOLL FREE: 1-888-471-1038

PHONE: 727-823-6100

FAX: 727-823-6044



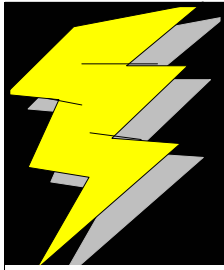
Likely Scenario

Lightning is unpredictable, and it is true that lightning does not strike in the same spot twice, but it does not mean that it can not move over a couple of inches. When lightning strikes and destroys electronic equipment there has to be a reason. A gate access system in the security industry is the most difficult system to protect against lightning, and a double gate is double trouble. We need the customer's castle to be well protected from outside intruders. It is not impossible to protect a gate access system, and the customer must be willing to dig deep in his pockets to protect this system. Let's answer a few questions as to why lightning is getting into the system.

Likely scenario: 99% of all damages caused by lightning for access control systems are through the phone line, but there are other contributing circumstances that have a cause and effect. In order for damage to occur we have to have a way in, but most importantly we have to have a way out. In the case of access control, we have many ways in & out of a system, and lightning can come in, or out in any direction. As the case above, generally lightning expectancy to enter and destroy is through the phone line. The tele-entry distributes more path ways to different grounds through out the system as shown.. If it is a piece of metal, lightning will flow on the surface of it, and if there is a PC board in the way, lightning will blow it out. There are two kinds of blow outs, a direct strike which creates a hole in the surface of the equipment and chard reminiscent like miniature arc welding, or we can not find the damaged caused by an indirect ground strike components on the

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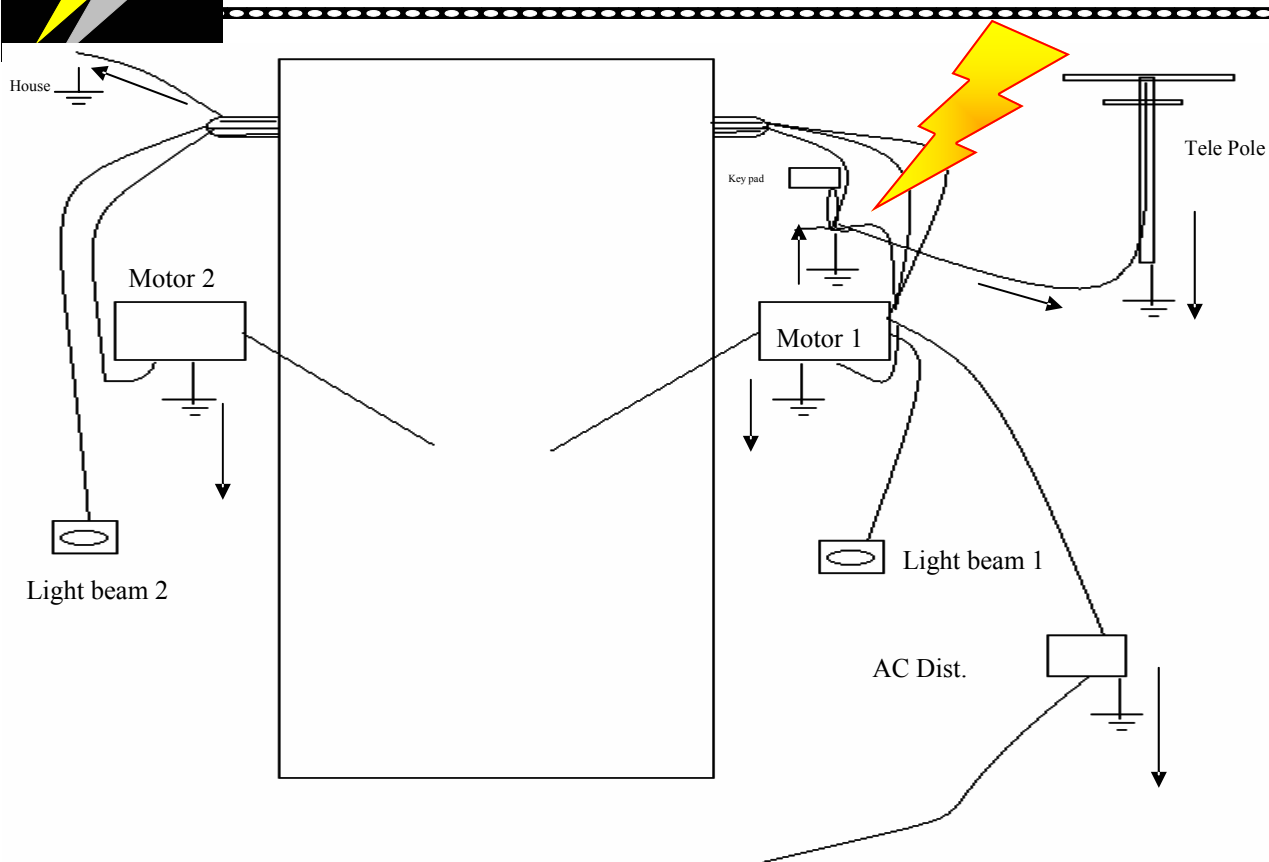
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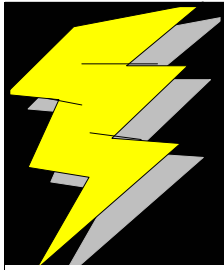


Likely Scenario 2

board. Possibility number (2), has not changed much except where lightning is entering the equipment at the tele-entry by way of physical ground. If you notice that the path ways that lightning is traveling has not changed much except one path way is out of the system through the phone line instead of in. I would tend to believe the damage in this scenario would be a bit more drastic on the boards and other surrounding equipment. In scenario (1 & 2) we can eliminate the case ground loop and isolate the tele-entry from both physical ground loop and the phone line from MA-Bell. Are you seeing a common denominator yet? Lets go on to Scenario #3.

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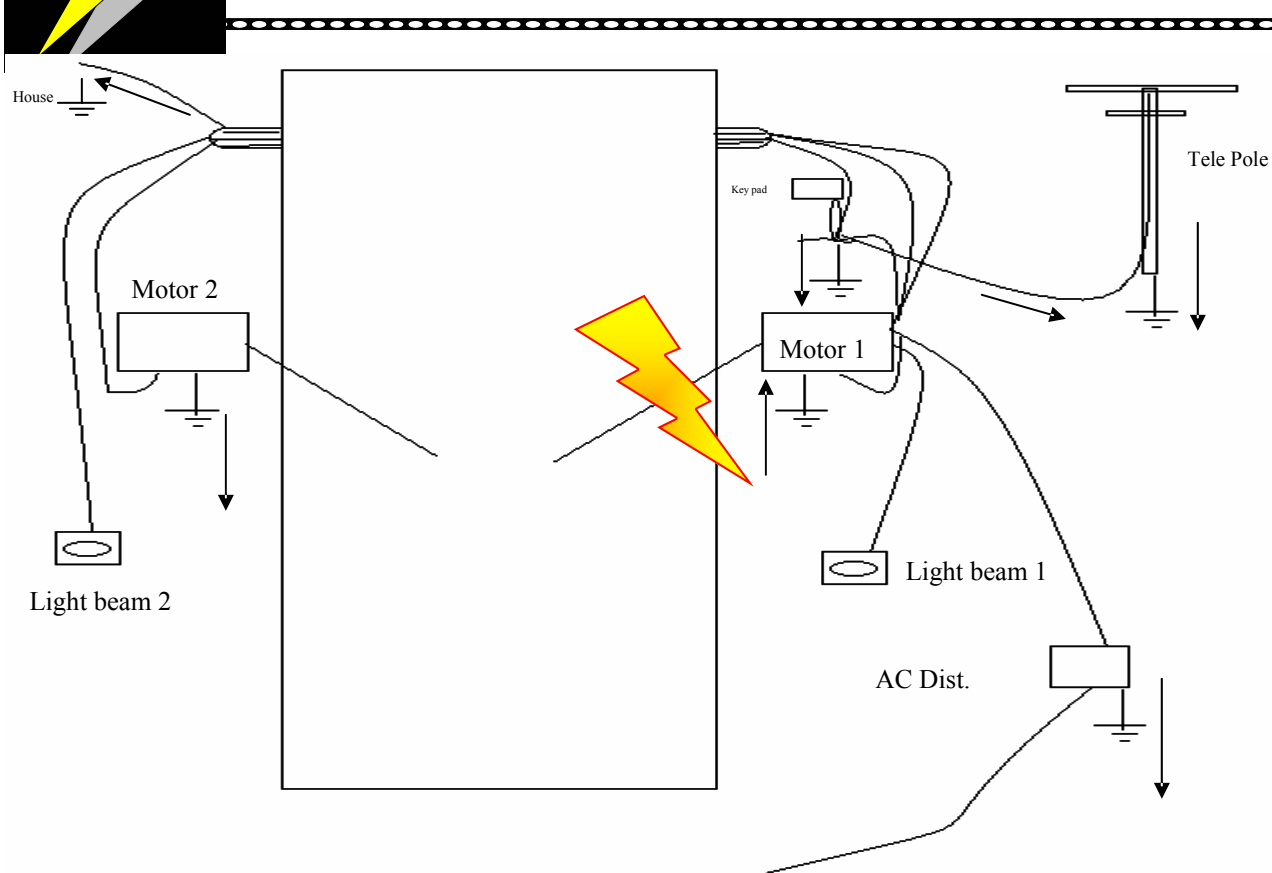
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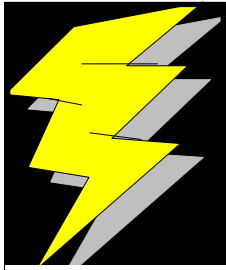


Likely Scenario 3

Scenario #3, not much has changed except the point of entry where lightning is coming in the case ground of the motor, and the path way out are has not changed either except the tele-entry. Unfortunately the damage is the same. What is the common denominator? Lets move on to Scenario #4.

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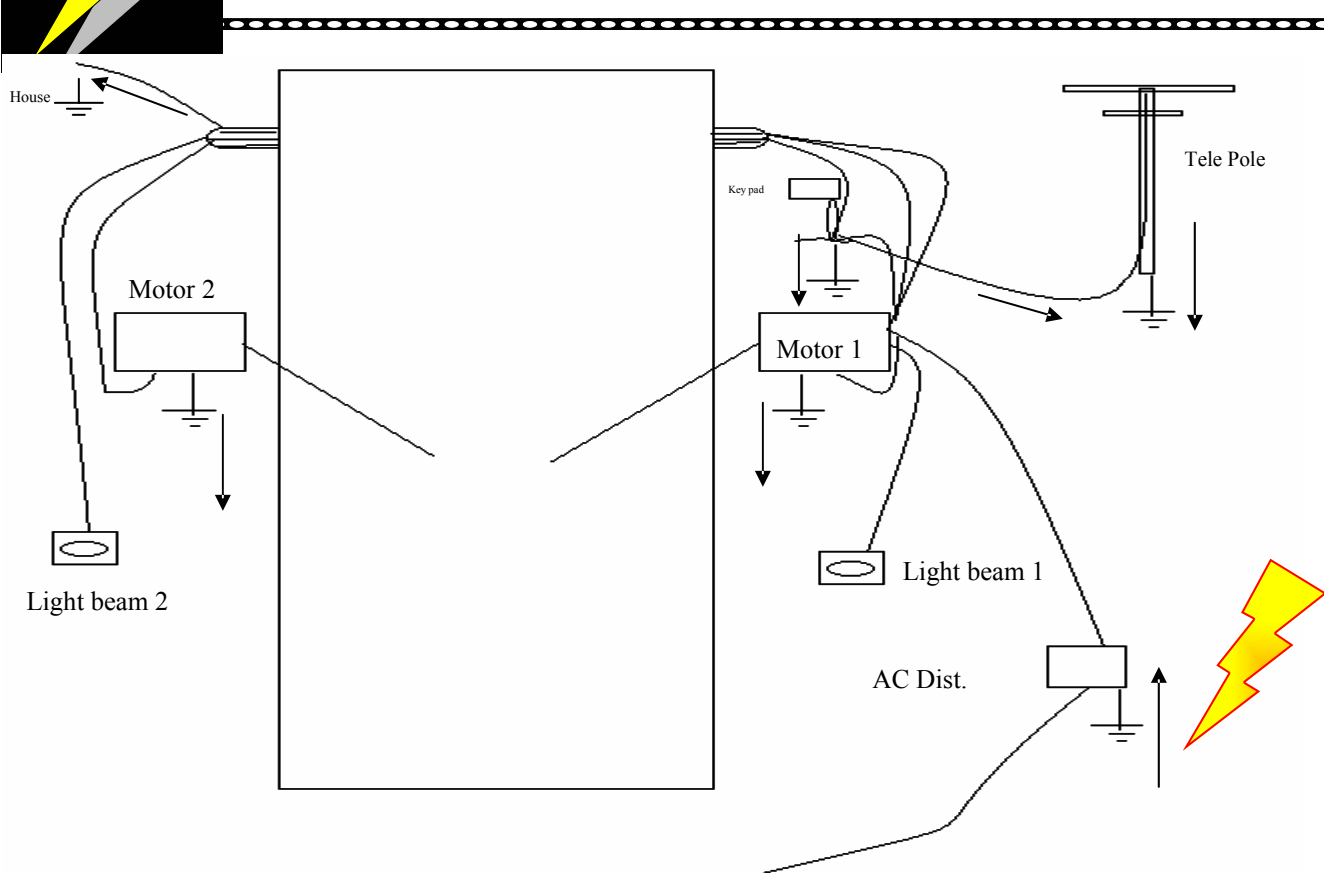
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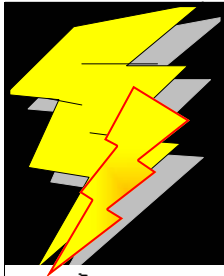


Likely Scenario 4

Scenario #4, not much has changed except the point of entry where lightning is coming in the case ground of the AC distribution, and the path way out are has not changed either except the Motor. Unfortunately the damage is the same. By now it is evident as to what the common denominator is. Lets move on to Scenario #5.

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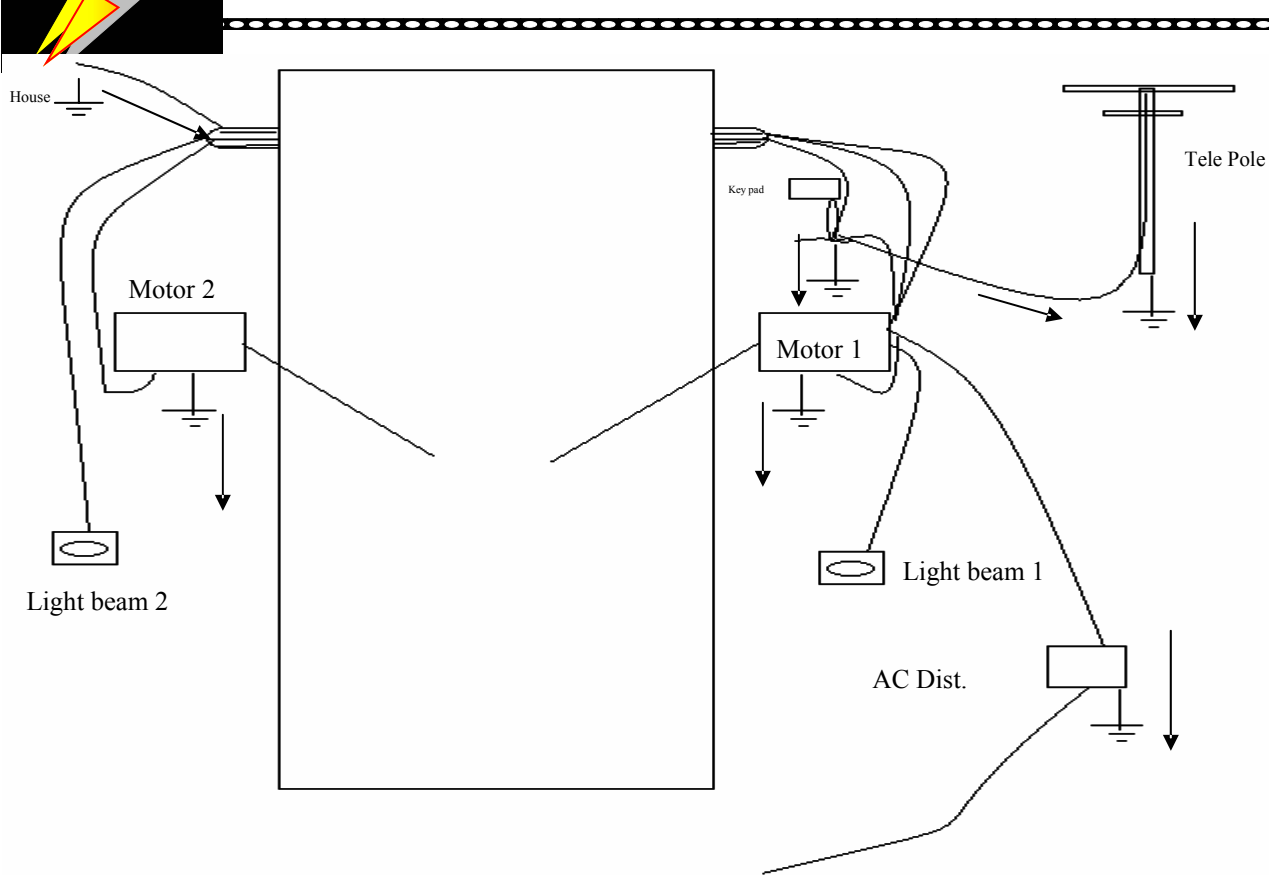
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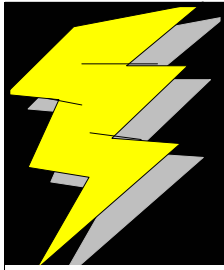


Likely Scenario 5

Scenario #5, not much has changed except the point of entry where lightning is coming in from the house electrical ground, and the path way out are has not changed either except the AC Distribution. Unfortunately the damage is the same. The answer to our common denominator is ground. Lets move on to Scenario #6.

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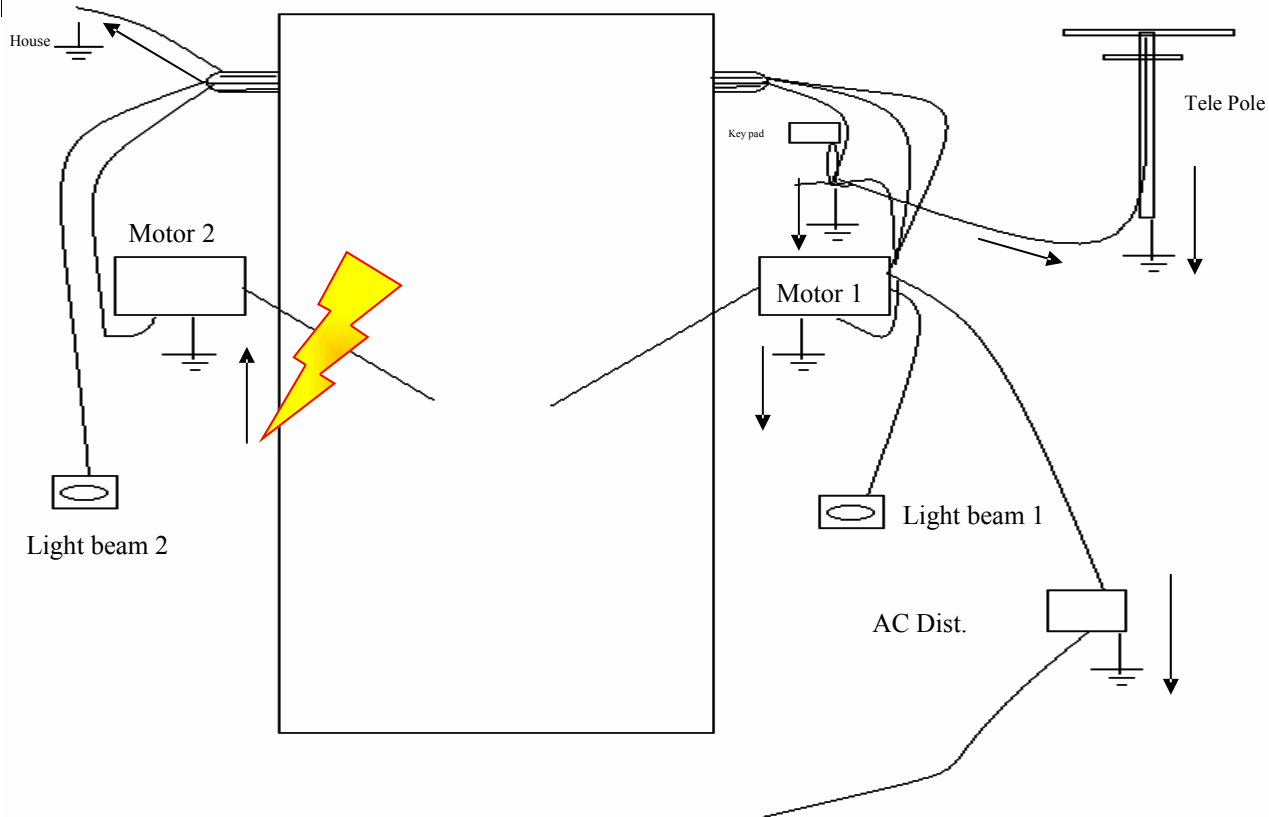
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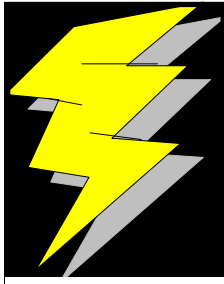
Likely Scenario 6

Scenario #6, not much has changed except the point of entry where lightning is coming in from case ground at motor 2, and the path way out are has not changed either except the house. Unfortunately the damage is the same. I think you get the idea what must be done.

1, Each motor needs a surge suppression device, a 120HWCP20CB surge suppression that is a three stage hybrid, two tank circuit design and designed as an in-series device. All power must go through it, and the protective devices are practically sitting on the line. 2. We need to prevent a bi-directional ground from creating a problem as well. Once we dump the surges, or lightning coming up the ground, we do not want to have a path way into the system, rather create a way out only. In this case we need to use Spike Blocks on each motor AC input ground wire. This will choke up the path way for lightning to travel by way of the motors. 3. Tele-entry needs isolation and protection as well. First we need to isolate the head from the pole to eliminate that ground path way. Next we need to install a (2) Optelator or (2) TelcoISO2WDTB/G200V four stage phone line protection with a isolation transformer to break the connection from MA-Bell. The Optelator is 100% effective with 5" of fiber optics. The TelcoISO2WCTB/G200V is 99% effective, but arcing is

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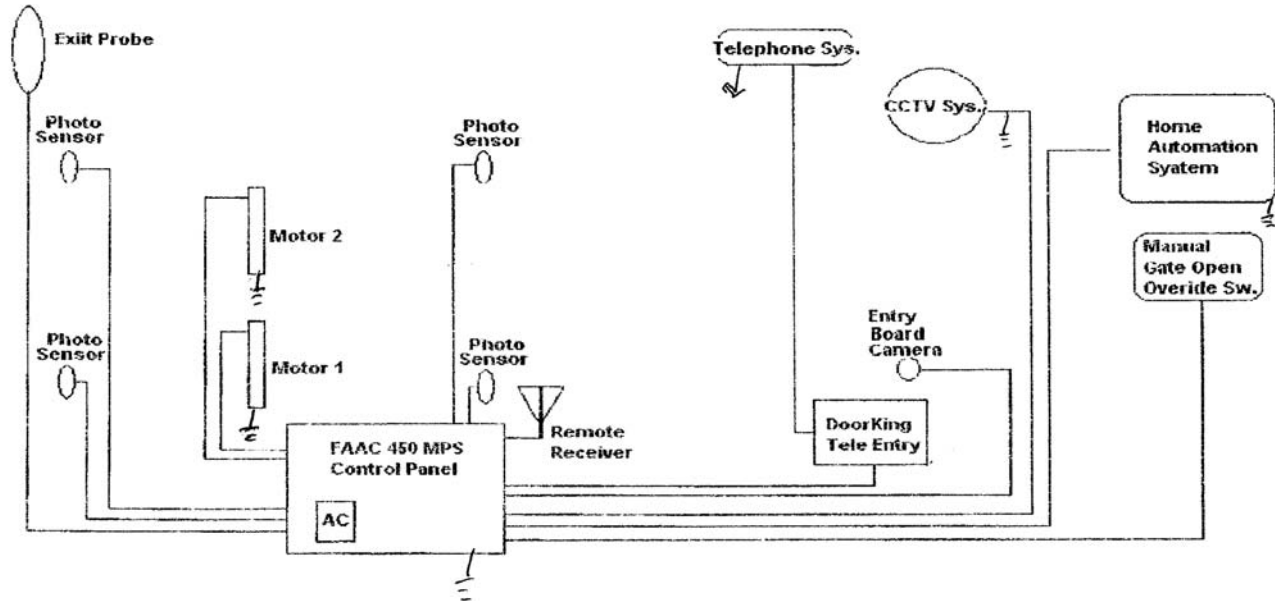
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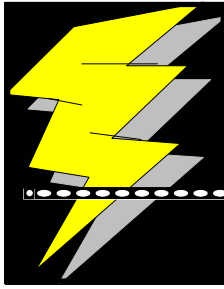
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Owings Mills, Maryland 21117
wdshapiro@custom-electronic.com
V (410) 363-4949 Fax (410) 363-7486

Bond Gate Entrance

over the small transformer, but the three stage surge suppression should prevent the arcing. Manual Gate Override should have a DATAISO2WDTB/G 5V (four stage surge suppression with a isolation transformer) installed, possible arcing. Home Automation System should have a DATAISO2WDTB/G5V on the Control cabinet side, and DDual2WDTB/G5V (three stage surge suppression device) on the home side. Door King should also have a DATAISO2WDTB/G5V protection device and a DDUAL2WDTB/G on the intelligent loop. The CCTV System should have one CCTVISOBNC C/V on the Control side and at the home side it needs a CCTVBNC C/V device. The Remote Receiver should have a CCTV C/F device, normally they are an F-connector set up, and while you are at it, see if you can isolate the antenna from the Case of the Control Cabinet. Exit Probe, needs a DDual2WDTB/G5V N/R for the loop line that may induce a EMI into the system and create some damage there. Photo Sensor, seems to be not effected. The Control Cabinet AC power source need protected with the 120HWCP20CB and a Spike Block as well. Also a hidden area that needs a Spike Block is the Demark ground for the phone line from MA bell. That is a problem that needs to be addressed. According to the tech, there are no Ground rods at the motors and Control Cabinet, do not install additional grounding, and if you do, install the Spike Block-1 to prevent feed back loops. The Exit Probe could use a DDual2WDTB/G5V N/R. Excellent chance to pick up EMI from that direction.

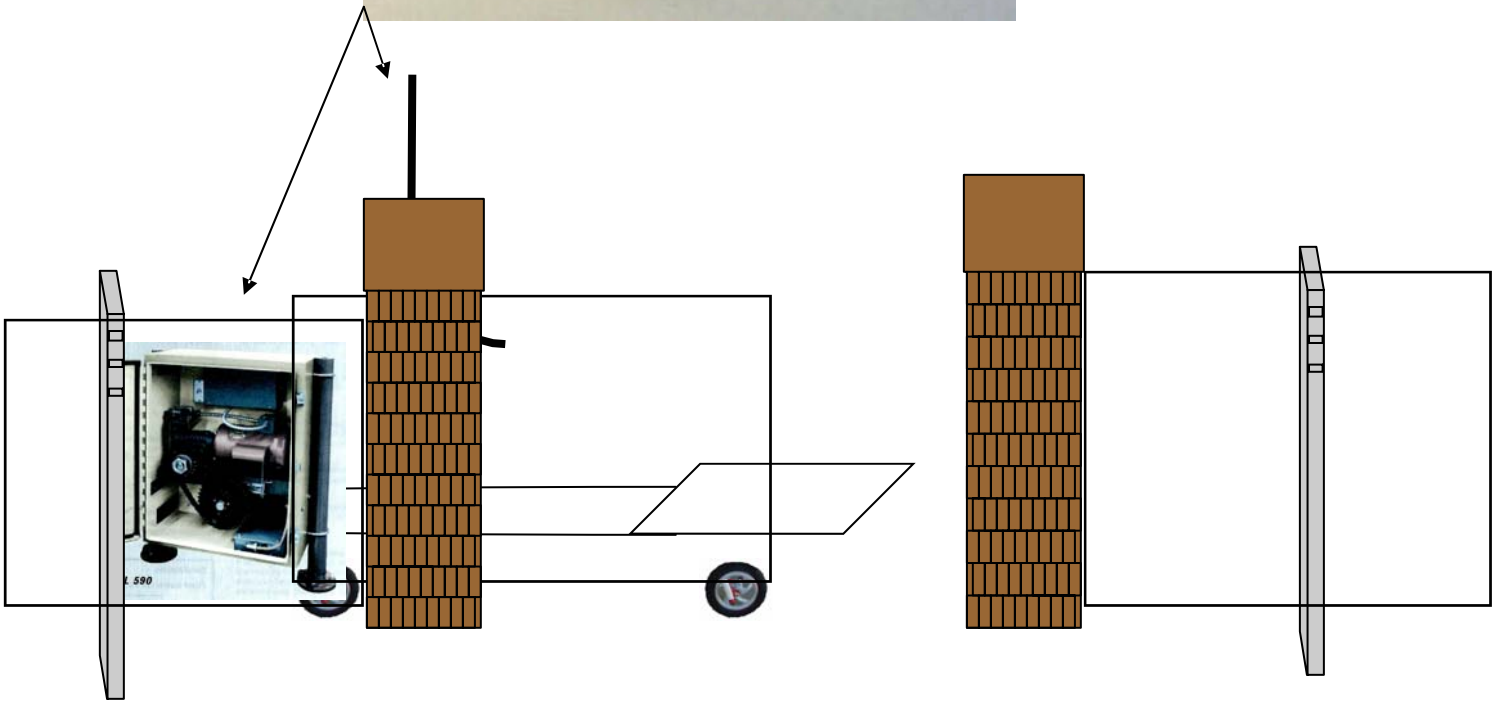
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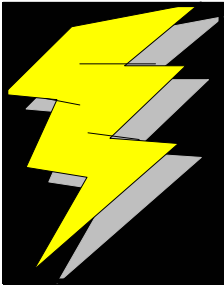
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RF communications we need a CCTV C/F coax protection device. It still remains a problem, but hopefully we can slow down the issue with lightning with the other technology installed.

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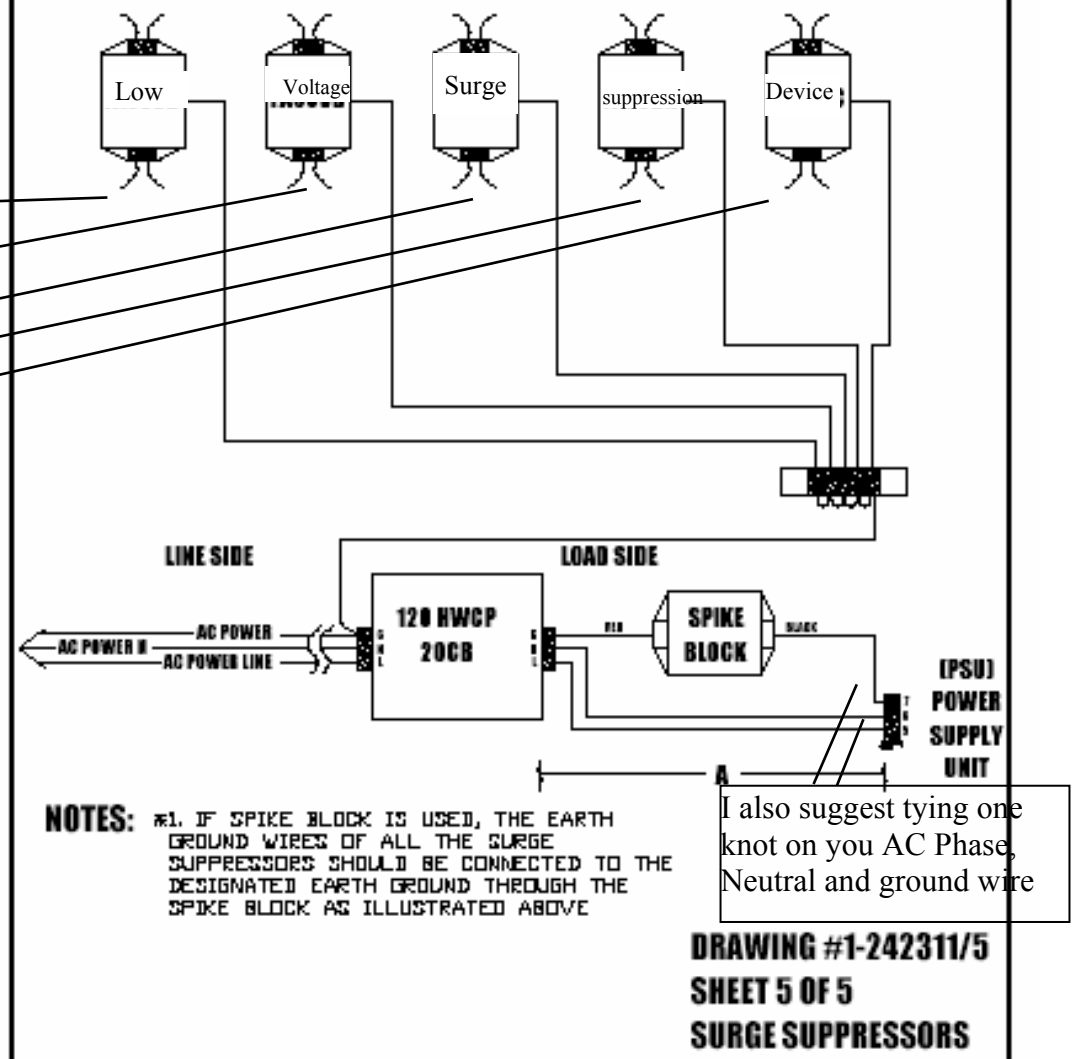
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EARTH GROUND WIRE CONNECTION OF SURGE SUPPRESSORS

DRAWING #5

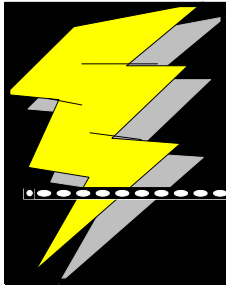
Special note:

Consider tying three knots in the wire between the surge suppression and the equipment



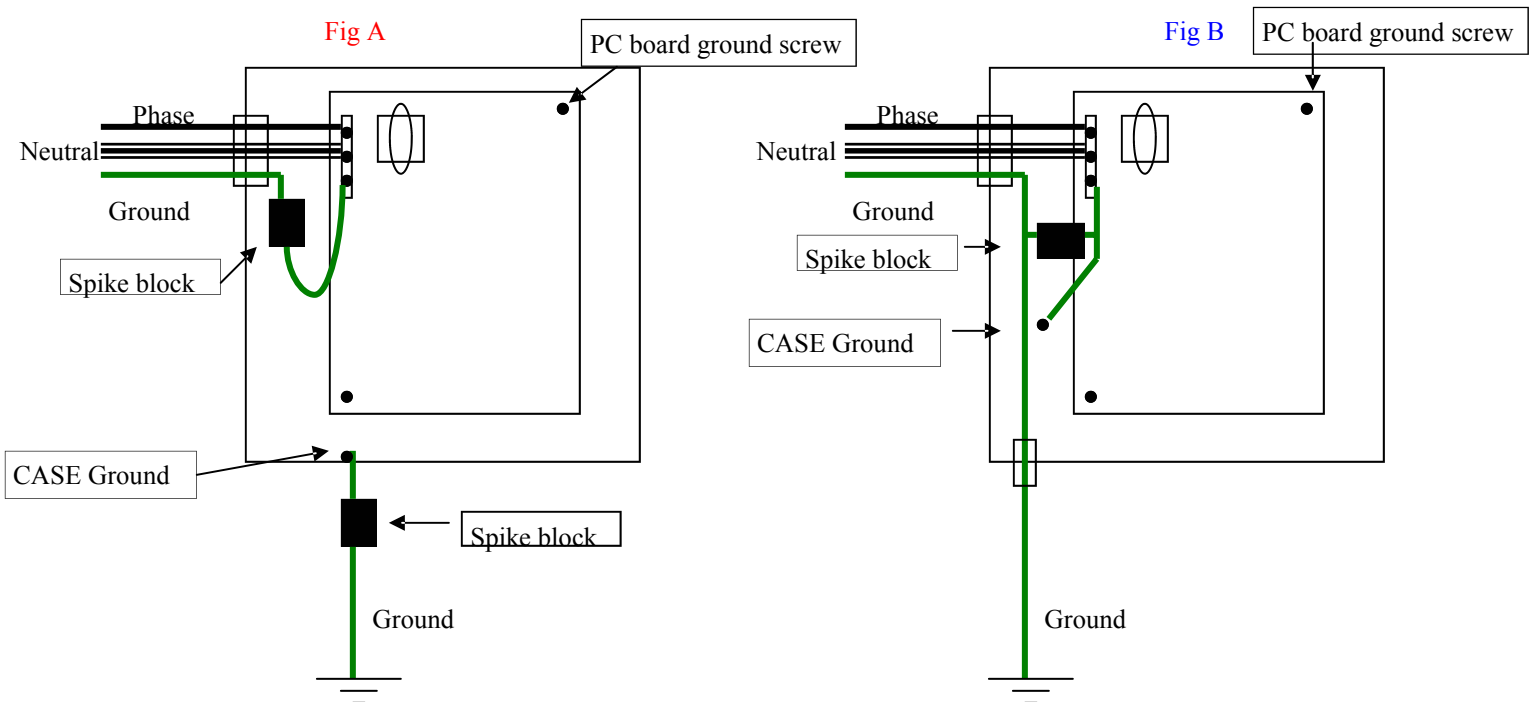
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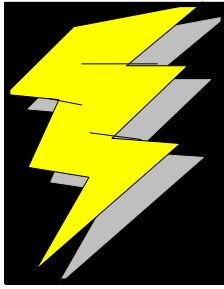
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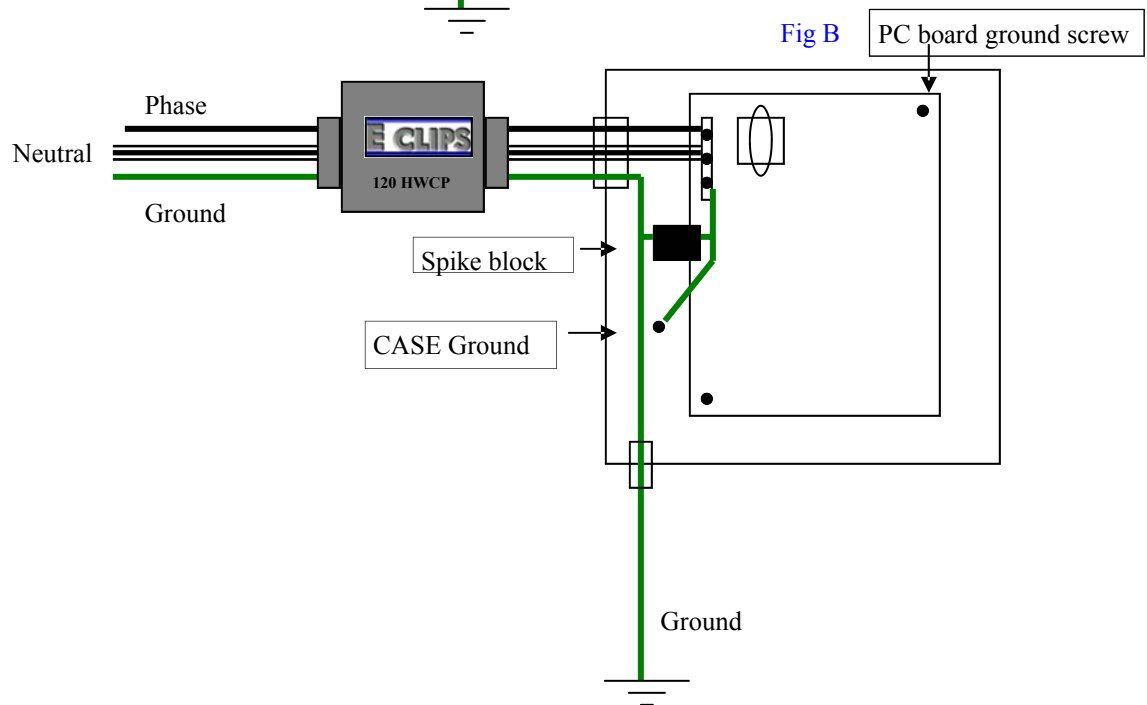
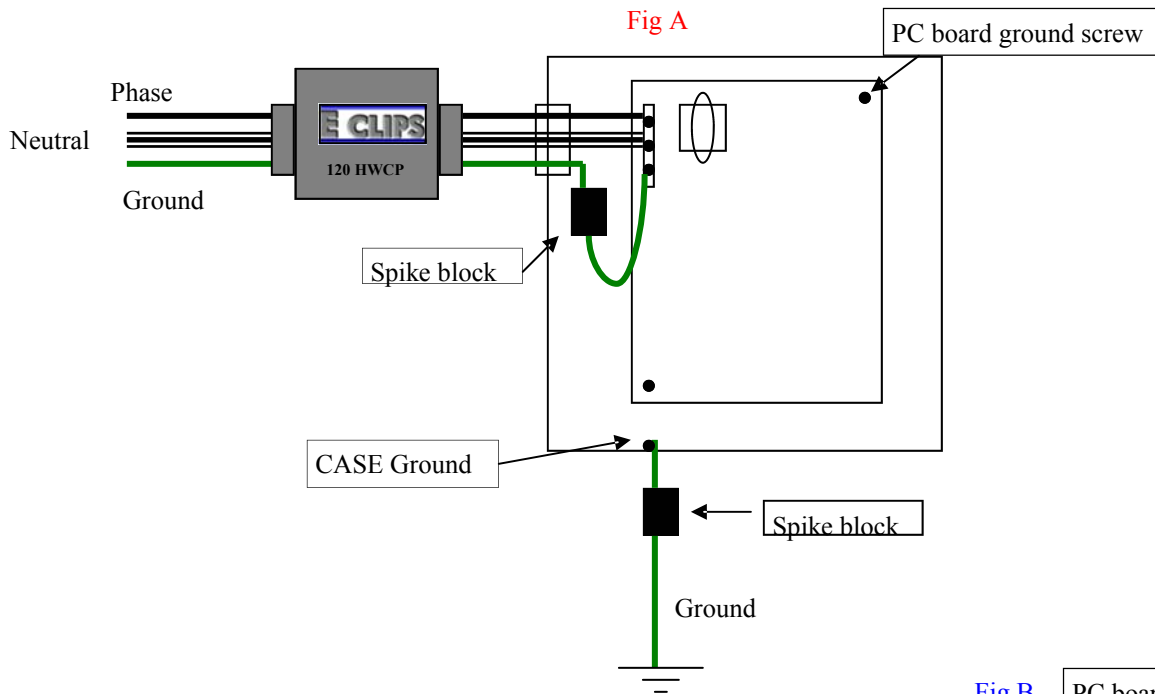
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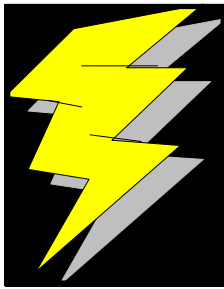
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Fig A

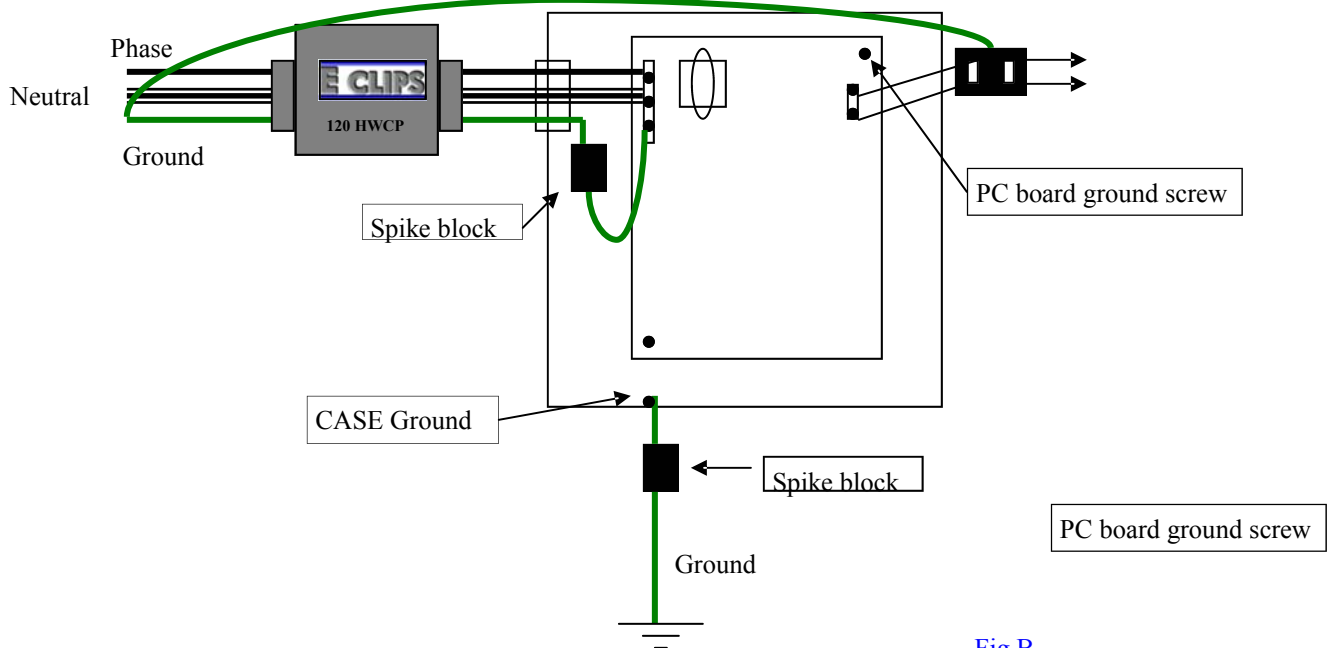
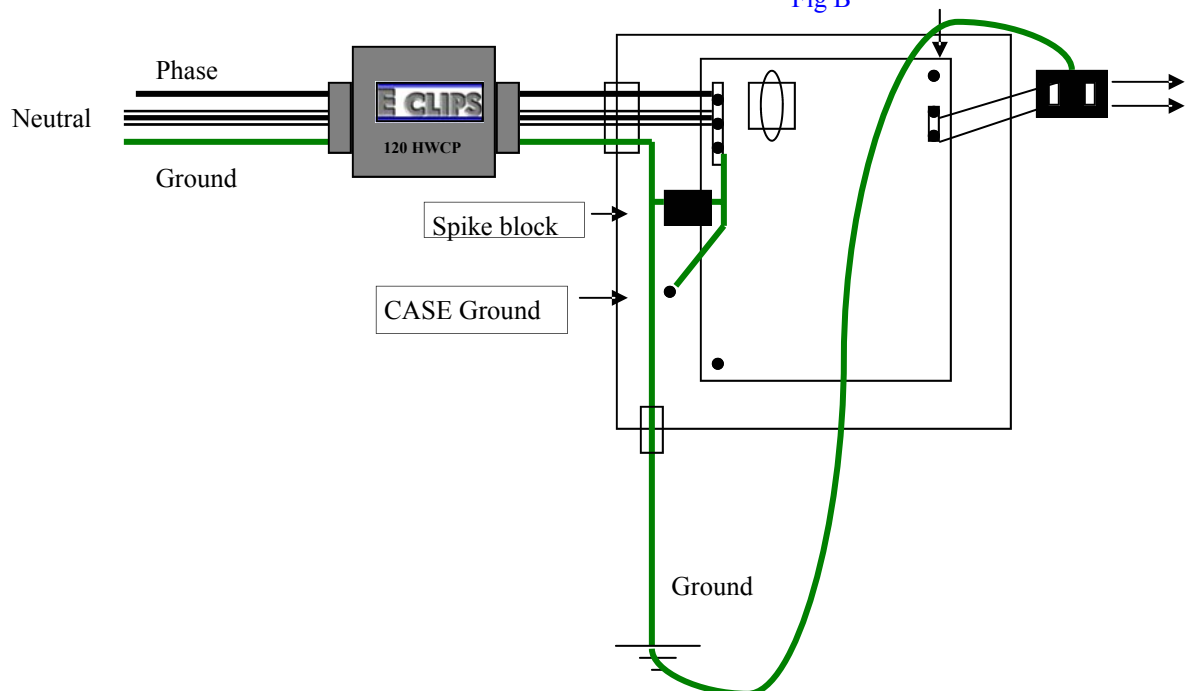
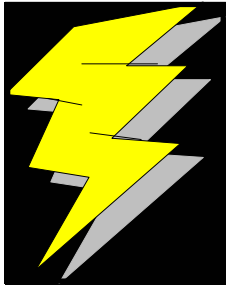


Fig B



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Fig A

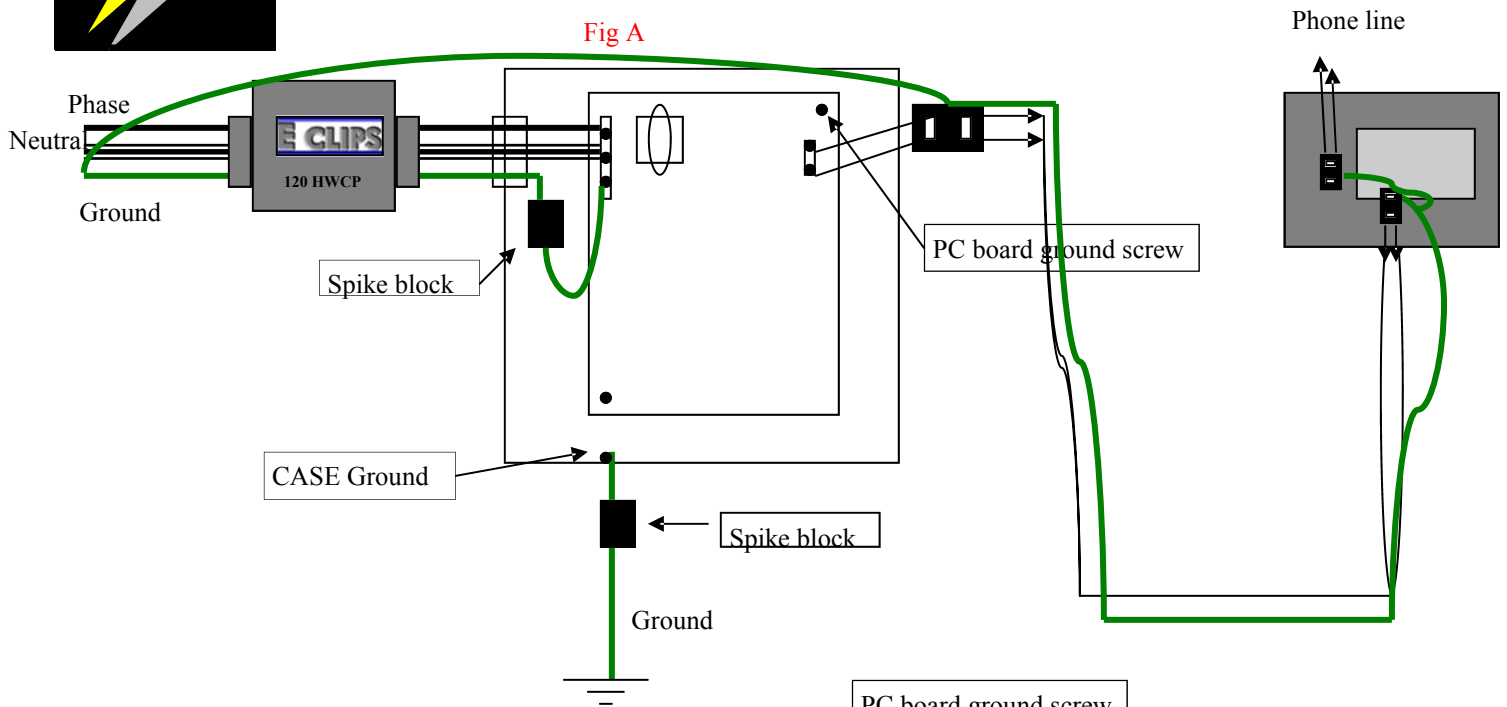
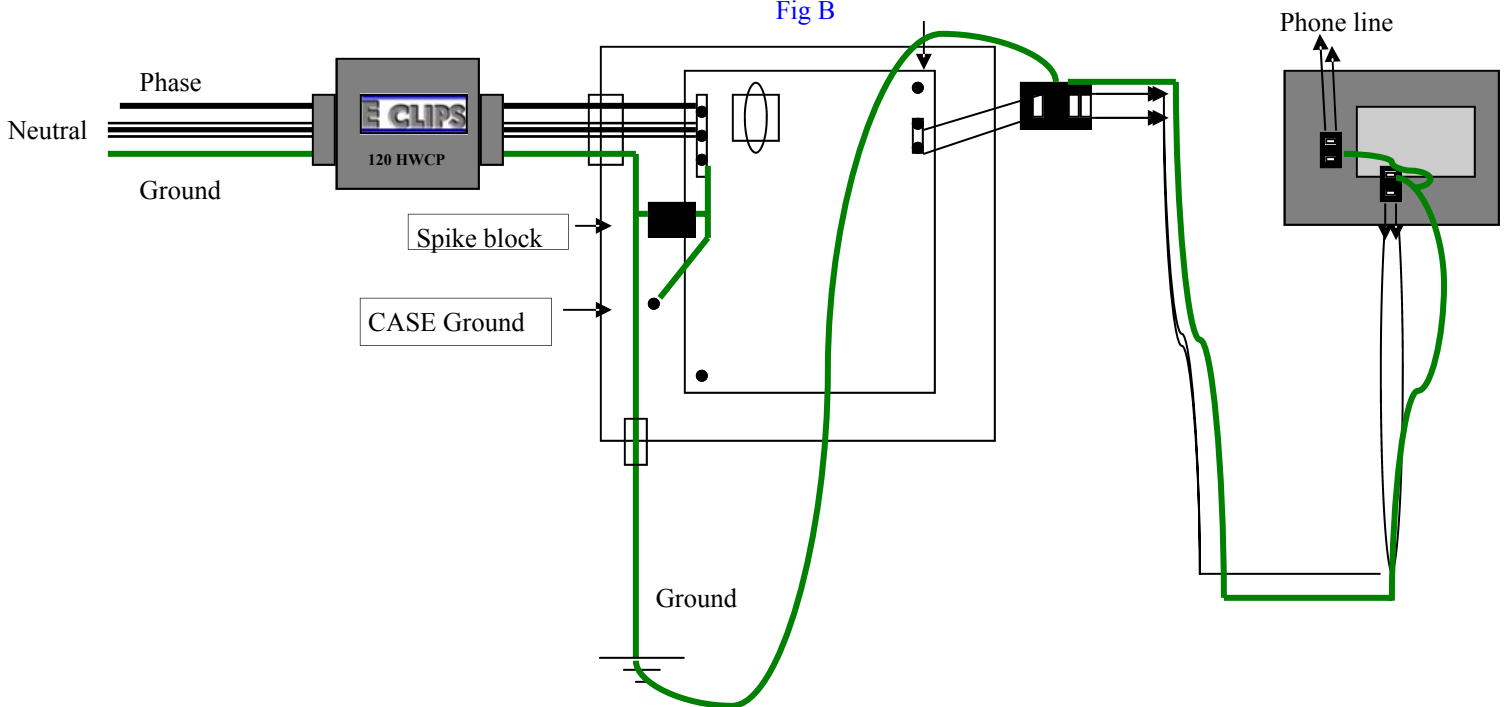
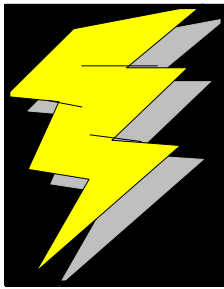


Fig B



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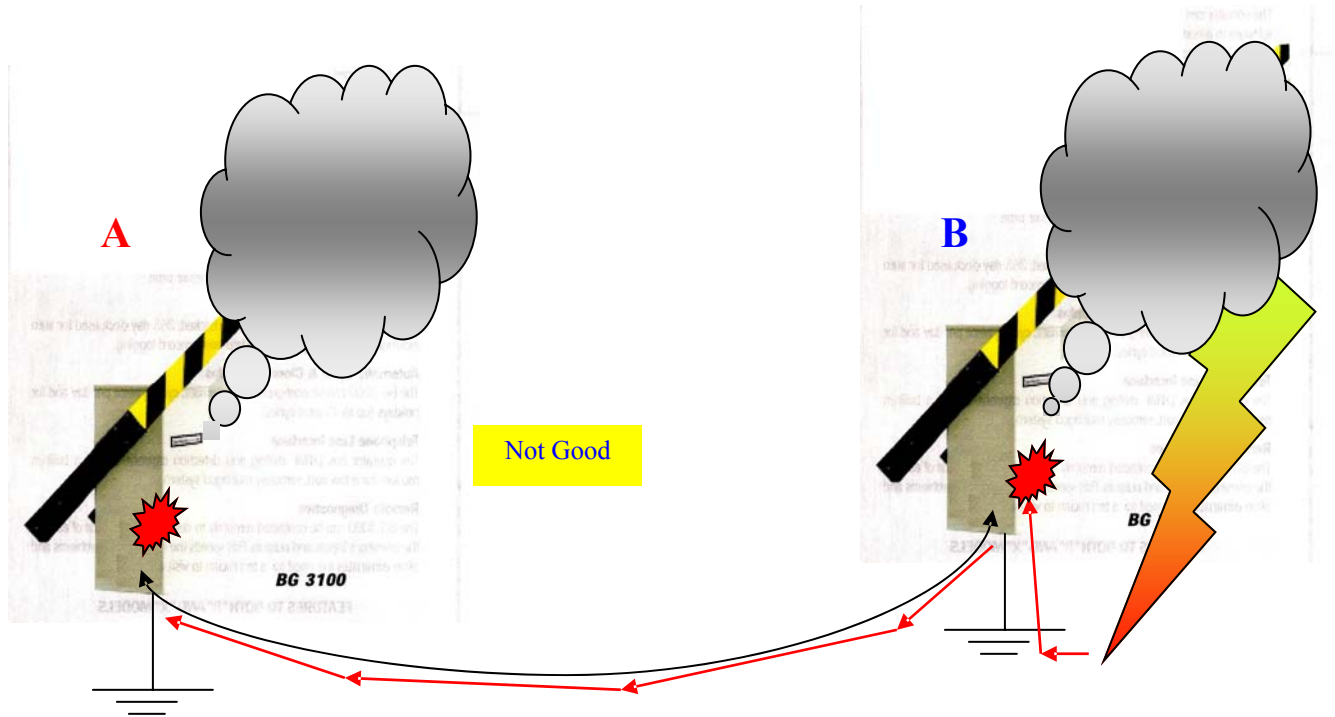
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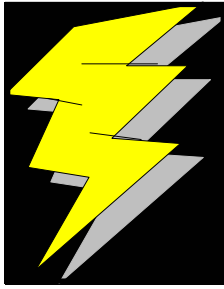
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Must have to protect the system

120HWCP20CB (3) units

Spike Block (4) units and if you install
two additional ground rods add (2) more.

Optelator (2) or TelecoISO2WDTB/G200V

DATAISO2WDTB/G5V (3)

DDual2WDTB/G5V (2)

DDual2WDTB/G5V N/R (1)

CCTVISOBNC C/V (1)

CCTVBNC C/V (1)

CCTVC/V (1)

Not a bad idea to add these

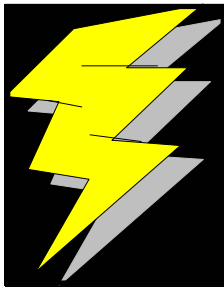
DATAISO2WDTB/G12V for Photo
Sensors (4) units.



5" of Real Fiber Optics, total phone line Isolation.
Protection rating is 100%.

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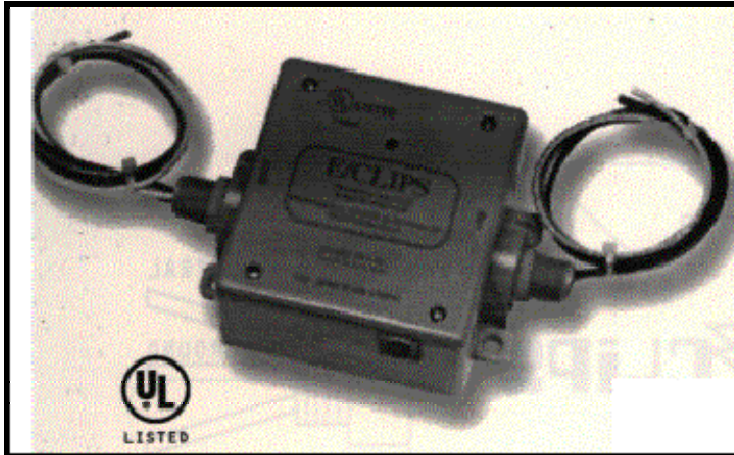
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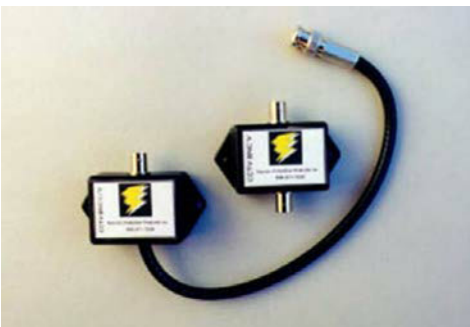


120HWCP20CB

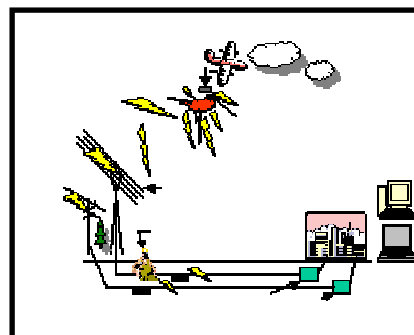
This Unique Product is designed to provide superior transient voltage surge protection & noise reduction for Branch Circuits, Fire Alarms, PLC, NC/CNC, Controls, Card Access, Gate Access, Telemetry, (2)units in a 120/120 240 single phase application for PLC or Computer related PC board power supply drawing no more the 20 amps per line. This unit will eliminate a high degree of noise coming in the AC power, caused by HVAC, Pumps, Motors and other noisy equipment that can cause false alarms especially on Fire Alarm panels, or harmful effects affecting the performance of the PC board.



TelcoISO2WDTB/G200V, DATAISO2WDTB/G5V or 12V, DDual 2WDTB/G 5V, DDual2WDTB/G 5V N/R are surge protectors for Single type zones or loops of either 16-volt or 24-volt. Protectors are 3-stage with primary and secondary protection that will greatly reduce waste caused by lightning and will protect the equipment. Units are encapsulated with a heat dissipating epoxy, which greatly enhances component performance and long life



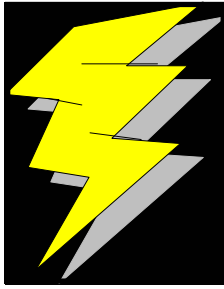
Stormins CCTV ISOBNC C/V & CCTVBNC C/V coaxial video line surge suppressor incorporates state-of the-art technology and provides multiple elements of protection for your sensitive video equipment



Military considers it an anti-terrorist device, but it prevents bi-directional grounds that EMP can feed back loop up into the equipment.

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Prices

120HWCP20CB (3) units Retail Each \$268.00 each, your cost \$150.00

Spike Block (4) units and if you install Retail Each \$299.00 your cost \$199.00
two additional ground rods add (2) more.

Optelator (2) Retail \$344.95 each, your cost \$259.95 each

Or (2) TelecoISO2WDTB/G200V Retail \$95.00 each, your cost \$75.00 each

DATAISO2WDTB/G5V (3) Retail \$95.00 each, your cost \$75.00 each

DDual2WDTB/G5V (2) Retail \$69.95 each, your cost \$49.95 each

DDual2WDTB/G5V N/R (1) Retail \$69.95 each, your cost \$49.95 each

CCTVISOBNC C/V (1) Retail \$121.60 each, your cost \$94.00 each

CCTVBNC C/V (1) Retail 96.60 each, your cost \$69.00 each

CCTVC/V (1) Retail 96.60 each, your cost \$69.00 each

Possible DATAISO2WDTB/G12V (13) Retail \$95.00 each, your cost \$75.00 each

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