

# ChannelPlus AC Surge Suppressor

The H293 bi-level Surge Suppressor features a unique (patent pending) two-stage, 960 joule surge protection circuit. The first stage provides 640 joules of protection across the hot-to-neutral connection with a response of only one nanosecond before the clamping starts. With ordinary single-stage surge protectors, a surge higher than the rated number of joules, will disable the surge protector leaving the devices near it unprotected. With our surge suppressor, this event will disable only the first stage protection circuit, leaving its devices protected by the second stage. The second stage protection is still 340 joules across the hot-to-neutral connection, making it more than many single state surge protectors.

The H293 protection circuit clamps at 400 volts (UL 1449 rating) and provides protection from surges up to 6,000 volts without being damaged. It also provides protection up to 72,000 amps (48,000 hot to neutral, 12,000 hot to ground and 12,000 neutral to ground) without being damaged. A noise filter helps audio and video devices maintain steady performance by recuding static and RFI on the AC line.

There are built in status lights that indicate exactly how much protection is currently available (see Status Lights below). When a large surge or spike occurs beyond the specified limits, the suppressor should protect the attached equipment, but the primary protection circuit will now be inactive. Even so, in this believe design, there is still partial protection for the equipment that will work against a second large surge. It is advisable that when the lights indicate partial protection (Green - Flashing), the unit should be replaced soon.

## THE NEED FOR SURGE PROTECTION

The AC electrical lines can experience sudden surges in voltage (up to 6000 volts) from sources outside and inside the home. Outside sources could include industrial equipment being used nearby, while inside sources could be air conditioning units turning on and off, refrigerators and other major appliances. These can damage electronic components, cause loss of data, input/output errors, and computer system crashes. When spikes and surges occur in your home, the surge suppressor will protect your equipment by reducing these voltages to a safe level.

LED	STATUS
Green - Steady	NORMAL - 640 joules of protection
Green - Flashing	First stage gone - 340 joules of protection H-N Replace Surge Suppressor SOON
Red - Steady	No more protection, REPLACE NOW

**WARNING:** This surge suppressor is NOT a lightning arrester and may not protect against lightning induced voltage surges.

**FOR INDOOR USE ONLY:**  
DO NOT use in damp areas or near water.

The surge suppressor should only be used with a three-prong standard AC outlet. The surge suppressor cannot provide complete protection without a grounded AC source.

**WARNING:** To reduce the risk of fire or shock hazard, do not expose this product to rain or moisture.



### CAUTION

RISK OF ELECTRICAL SHOCK, DO NOT OPEN



**CAUTION:** TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER OR BACK. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

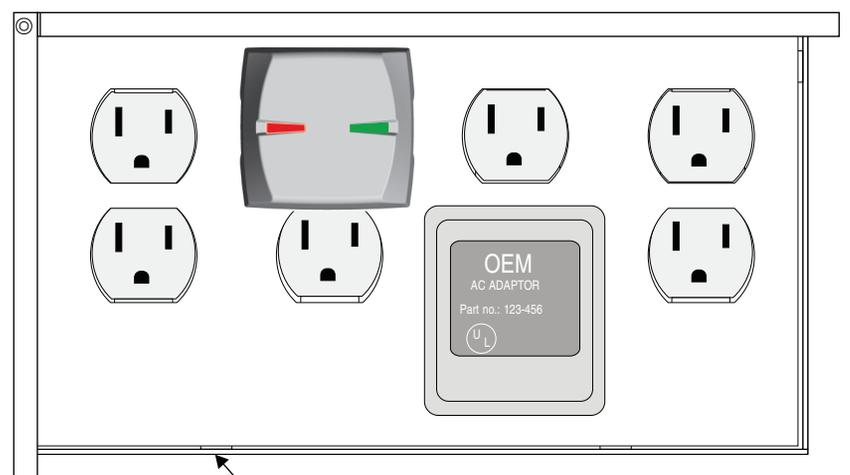


This symbol is to alert you to the presence of uninsulated dangerous voltage inside the product which could constitute a risk of electric shock. Do not open the products case.



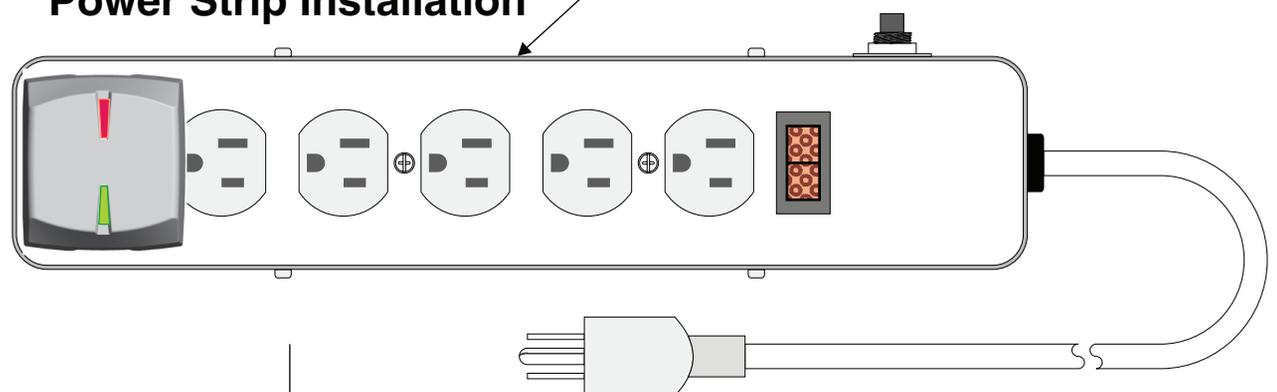
This symbol is to inform you that important operating and maintenance instructions are included in the literature for this product.

## H290 Installation



The H293 is shown in an H290 8-outlet box used in an Open House structured wire grid system and in a power strip. The surge suppressor can plug into any of the outlets, and will protect all the other units plugged into an H290, H291, the power strip, or a J-Box.

## Power Strip Installation



## Specifications

Clamping Voltage	Maximum voltage allowed across suppressor	400 volts
Maximum surge dissipation	Primary + Secondary, Hot to Neutral Secondary only, Hot to Neutral Total: H-N, H-G, N-G	640 joules 340 joules 960 joules
Maximum surge voltage	Maximum power line surge that can be protected by unit	6000 volts
Maximum surge current	Hot to Neutral, peak Hot to Ground, Ground to Neutral, peak Total, all terminals	48,000 amps 12,000 amps 72,000 amps
Response time	Time for clamping to start	1 nanosecond
Noise filter reduction	100KHz to 200MHz, filters the line to reduce static and RF interference	Up to 35 dB
UL-1449 rating 2nd edition	Tested by Underwriters Laboratories to Maximum transient or "let through voltage after clamping	400 volts

## MECHANICAL

Grounded terminal < 2 inch cub Plastic case fits into Open House enclosures with room for power supplies Fire retardant

Good ...  
 Typical room - phone, TV  
 Media center - phone, satellite receiver, AV modulators  
 Home office - phone, TV, cable modem  
 Better ...  
 Typical room - phone, TV, ethernet  
 Media center - phone, TV, ethernet, satellite receiver, AV modulators  
 Home office - phone, TV, ethernet, cable modem  
 Best ...  
 Typical room - phone, TV, ethernet, satellite receiver  
 Media center - phone, TV, ethernet, satellite receiver, AV modulators, hi-speed data  
 Home office - phone, TV, ethernet, satellite receiver, cable modem, hi-speed data

	Good	Better	Best
Typical Room	1 Cat-5 1 RG-6	2 Cat-5 1 RG-6	2 Cat-5 2 RG-6
Media Center	1 Cat-5 3 RG-6	2 Cat-5 3 RG-6	3 Cat-5 3 RG-6
Home Office	1 Cat-5 2 RG-6	2 Cat-5 2 RG-6	3 Cat-5 3 RG-6

**Wiring a house for OpenHouse**  
 The cables in an OpenHouse run from the various rooms of the house directly to the service center location. (This is known as 'home run' wiring.) Two types of wire are used for communication and entertainment: Cat-5, 4-UTP (4 Unshielded Twisted Pairs) wire handles data or 1 to 4 telephone lines. RG-6 coax handles television (antenna or cable), satellite dish, cable modem, or AV modulator signals. (An AV modulator creates new TV channels for front door camera, DVD player, a VCR or a satellite receiver.) We recommend the following pre-wire schemes. Run these wires from the service center to the rooms indicated.

**Transient Voltage Surge Suppressor  
 ChannelPlus®  
 Model H293**



**Linear**  
 Building On Innovation.

USA & Canada (800) 421-1587 & (800) 392-0123  
 (760) 438-7000 - Toll Free FAX (800) 468-1340  
 www.linearcorp.com

**LIMITED WARRANTY STATEMENT**

Linear LLC warrants this product to be free from defects in material and workmanship for 2 years. The time period will be measured using the date code labeled on the product. Linear LLC is not responsible for damage to the product resulting from the buyer's improper handling, stocking or warehousing of the product. Any implied warranty arising from the sale of the product including implied warranties of merchantability and fitness for purpose are limited. Linear LLC shall not be responsible for any losses, damages or expenses, whether direct, consequential, or incidental arising from the use or the inability to use the product. Some states and countries do not allow limitations or how long an implied warranty lasts or the exclusion or limitation or incidental or consequential damages, so the above exclusions may not apply. The Linear LLC warranty gives specific legal rights in addition to other rights, which may exist and vary from state to state and country to country.

The warranty is limited to repair or replacement of products returned, freight prepaid, to Linear LLC, there is NO PROVISION FOR LABOR COST OR OTHER REIMBURSEMENTS OF ANY KIND.

1. Failures due to product abuse, such as negligence, improper use, and electrical surge including damage from lightning, water damage or other damage due to natural disasters are not covered by the warranty. The most common form of product abuse is surge damage caused by lightning.
2. The warranty shall also be voided by any tampering with the date code, labels or other markings on the product.
3. Products that are damaged in transit to Linear LLC due to improper packaging or by the carrier (shipping company) will not be covered under the warranty. If the product was damaged or lost by the carrier, it is the sender's responsibility to create a claim against the carrier.
4. The user is responsible for all labor costs associated with removing, reinstalling and returning the product to Linear LLC.

Linear LLC, at its option, will repair or replace the defective product. Replacements will be made from B-Stock, if an exact replacement is not available, Linear LLC, at its option, will select the nearest equivalent product. The user is responsible for freight charges to Linear LLC. Linear LLC will return warranted repaired or replacements by UPS Ground or an equivalent service. A customer may pay the additional costs for second-day or next-day service.

All products returned for warranty service require a Return Product Authorization Number (RPA#). Contact Linear Technical Services at 1-800-421-1587 for an RPA# and other important details.

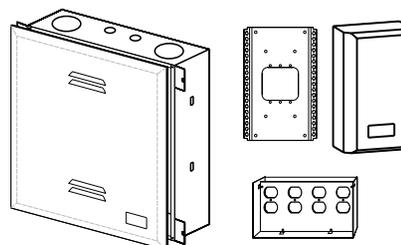


Compatible

**OpenHouse Enclosures, Modules, Accessories & Wall Plates**

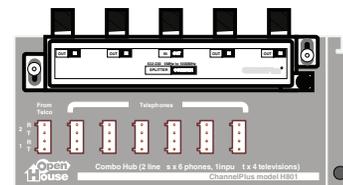
**Service center enclosures**

A full line of OpenHouse compatible enclosures, from simple, inexpensive mounting plates to high capacity in-wall cabinets. AC outlets can be mounted inside the cabinets using a UL listed accessory.



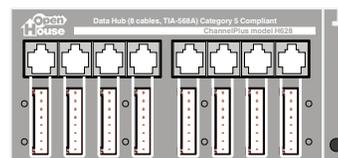
**Starter systems**

RF splitters and telephone punch downs. When it is time to upgrade, just snap this module out and replace with one of more of the more sophisticated units.



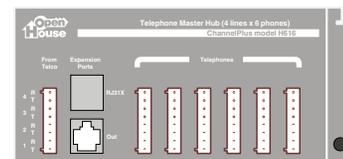
**Data hubs**

Termination blocks for the CAT-5 cables, Ethernet hubs. Bring the Internet to any room in the home. Or create a home data network.



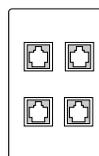
**Telephone hubs**

Connections for 1-4 phone lines to every room. Starter hub adds RJ-31X jack for security system dialer.



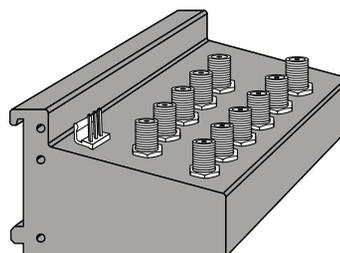
**Wall plates**

Wall plate systems for all rooms. The typical room gets TV and telephone. The Home office wall plate adds data ports. The media center wall plate adds satellite feeds.



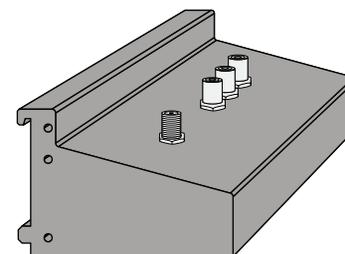
**Coax panels**

Distribute antenna or cable TV to every room of the house. Some models include bi-directional amplifiers for interactive cable systems. Some models include modulator inputs and IR engines.



**AV modulators (for service center)**

Create a new TV channel for a front door camera. Some models feature Cat-5 input connections.



**AV modulators (for media center)**

Create new TV channels for DVD, VCR, or a satellite receiver. These modulators sit in the media center. Some offer true MTS stereo.



**IR Accessories**

Control video devices from any room.



**New OpenHouse products are added all the time.  
 Visit our website to learn more:  
 www.openhousesystems.com**