Surge Protection

CHSP (Cutler-Hammer Home Surge Protector)

Stage 1: Primary Protection for Service Entrance

The best place to install surge protection is at the electrical entrance point to your home. The service entrance (loadcenter or breaker panel) is often where AC power, telephone lines and cable lines are located. Applying a CHSP product to your service entrance (stage 1) will reduce a voltage surge to an acceptable level for appliances and surge strips. For added protection, it is recommended that you install surge protection for your cable and telephone lines (see accessories) at the service entrance. The benefit of installing these products is that your AC, cable and telephone lines will all have the same ground potential, in one common location, for passing the surge away from your equipment.

SurgeTrap™ Family

Stage 2: Secondary Protection for Point of Use

A quality Cutler-Hammer SurgeTrap surge strip is recommended for sensitive electronic loads like computers or entertainment centers. Using a SurgeTrap surge strip (stage 2) reduces any voltage remnant down to an acceptable level.

For more information, see surge **Section 10**.

Table 3-36. Residential Surge Products

Product		Catalog Number	Price U.S. $
Stage 1			
CHSP Micro™		**CHSPMICRO** **CHSPMICRO230INT**	130.00 130.00
CHSP Max™		**CHSPMAX** **CHSPMAX230INT**	225.00 235.00
CHSP 3-Way™		**CHSPCHSR4P**	466.00
CHSP Ultra™		**CHSPULTRA**	414.00
Accessories			
SurgeTel™		**DHW4PT**	207.00
SurgeCable™		**DCXCAB2**	145.00
SurgeEthernet™		**DRJ45D30R**	228.00
Flushmount Kit™		**CHSPFMKIT**	52.00
Stage 2			
SurgeTrap™ Micro		**SGXMICROAC** ① **SGXMICRONET** ② **SGXMICROTV** ③	47.25 58.00 62.50
SurgeTrap™ Max		**SGXMAXAC** ① **SGXMAXNET** ② **SGXMAXTV** ⑤	102.00 116.00 116.00
SurgeTrap™ Ultra		**SGXULTAC** ① **SGXULTNET** ② **SGXULTTV** ③ **SGXULT3WAY** ④	198.00 214.00 225.00 207.00
SurgeTrap™ ValueLine		**SGXVAL6** ⑥ **SGXVAL15** ⑦	64.50 89.50

① AC Power
② AC + Telephone/Modem
③ AC + Cable
④ AC + Telephone/Modem + Cable
⑤ AC Power and Coaxial Cable
⑥ 6 Foot Cord
⑦ 15 Foot Cord

Discount Symbol **22-CD**

Application Recommendations

Table 10-1. Application Guide for Surge Products

Application Type	Cutler-Hammer Surge Products	Features and Competitive Advantages
Residential		
■ Home office ■ 120/240V loads	■ CHSP™ Whole Home Surge Protector ■ SurgeTrap™ plug-in surge protection	■ CHSP protects all residential loads ■ Only product available with three levels of protection (AC, telephone, cable) ■ Single point ground eliminates differential ground voltages ■ SurgePlane™ construction ■ Value-added package for contractors and home builders
Light Commercial		
■ Design build ■ Chain stores ■ Small facilities	■ Clipper VL ■ Clipper Power System Retrofit (seven models) ■ Clipper Power System Integrated (seven models) ■ AEGIS-PR powerline filter for cash registers and ATM machines (industrial grade) ■ SurgeTrap plug-in surge protection (commercial grade)	■ Ideal package for any commercial facility ■ Cost-effective protection using CPS-B or CVL protection ■ AEGIS-PR has extremely high level of common mode noise filtering for cash registers, ATMs and other critical electronic loads
Large Projects		
Including: ■ Commercial ■ Government ■ Schools ■ Institution ■ Military	■ Clipper Power System Integrated (seven models) available in panelboards switchboards, MCCs, switchgear, busway and automatic transfer switches ■ Clipper VL ■ Clipper Power System Retrofit (seven models) ■ Data signal link protectors ■ AEGIS for critical load applications ■ Power Conditioners (models: SRT and EVR)	■ Able to meet any competitor TVSS specification ■ Significant performance advantage using integrated Clippers (the preferred choice of consultants) ■ Quick ship capabilities from satellites and service centers ■ The industry's most comprehensive diagnostics ensure safe operation ■ Third party tested
Industrial		
Including: ■ Small and large facilities ■ WWTP	■ Clipper MCC (Motor Control Center) ■ Clipper VL ■ Clipper Power System Integrated and Retrofit (switchgear, switchboards, busway, panelboards and automatic transfer switches) ■ AEGIS powerline filters for critical loads (PLCs, robotics, etc.) ■ Reflected Wave Trap (RWT) ■ Datacom protectors ■ Volt Shield (swell / sag controller) ■ Sag Ride Through (SRT) power conditioner ■ Electronic Voltage Regulator (EVR)	■ Clipper MCC offers surge suppression for drives (available for retrofit and new installations) ■ AEGIS products are industry leaders for critical load protection (DIN rail mounting, extended warranty for connected loads) ■ Facility-wide solutions ■ Protection for drive/motor applications ■ SRT — power conditioning for voltage sag problems ■ EVR — ideal for voltage regulation problems
OEM		
Any OEM customer including: ■ Integrators ■ Medical equipment ■ Automation and control ■ Traffic control	■ Clipper Power System Caseless and Retrofit ■ Clipper VL ■ AEGIS powerline filter ■ DC, DC+ filters ■ Other custom components ■ Reflected Wave Trap (RWT) ■ Power conditioners ■ Datacom protectors	■ 20 years experience in OEM applications ■ Ability to meet customized requirements ■ Application engineering assistance ■ CE approval (AEGIS filters) ideal for international integrators ■ Small footprint series and parallel power filters
Telecommunications		
Including: ■ Cellular sites ■ Microwave ■ PCS ■ Paging systems	■ Tc Panelboards (clipper TVSS, transfer switch) ■ QuarterWave (TQP) protectors for RF coaxial lines ■ AEGIS+ ■ Clipper VL ■ DC protectors ■ Volt shield (sag / swell protection) ■ Engineering design support	■ Complete solution for protecting cellular (or PCS, microwave, GPS) base stations ■ Independently tested at lightning labs ■ Experience in worldwide applications ■ Ability to meet customized requirements

Product Description

Cutler-Hammer Surge Protector (CHSP)

The Cutler-Hammer Surge Protector (CHSP) is an externally mounted unit that provides industrial level surge protection in a residential design. The CHSP is available in four models and provides protection for all residential electrical equipment by reducing power surges, often caused by lightning, to an acceptable level for appliances and electronics. These units can be mounted into any manufacturer's breaker panel.

Cutler-Hammer Surge Protectors for Telephone and Cable

Cutler-Hammer also offers a full range of accessory products for telephone and cable, including SurgeTel which protects up to four telephone/modem lines; SurgeCable which protects up to two cable/satellite lines; and SurgeEthernet featuring protection for high-speed Internet hookups.

SurgeTrap™

Cutler-Hammer's SurgeTrap, plug-in surge protectors offer exceptional protection for electrical and electronic devices. Each of the SurgeTrap Ultra, Max and Micro are available in AC only, AC plus telephone/modem and AC plus cable. The SurgeTrap ULTRA 3-Way, in addition to having the above options, is available in AC plus telephone/modem and cable. SurgeTrap ValueLine products are also available.

Application Description

Two-Stage Protection

The Institute of Electrical and Electronic Engineers (IEEE) recommends two stages of surge suppression to provide the best protection for electronic equipment. Two-stage surge suppression should be provided for all cables entering a home, including power, Internet, coaxial and telephone.

Stage 1: Primary Protection for Service Entrance

The best place to install surge protection is at the electrical entrance point to your home. The service entrance (loadcenter or breaker panel) is often where AC power, telephone lines and cable lines are located. Applying a CHSP product to your service entrance (stage 1) will reduce a voltage surge to an acceptable level for appliances and surge strips. For added protection, it is recommended that you install surge protection for your cable and telephone lines (see accessories) at the service entrance. The benefit of installing these products is that your AC, cable and telephone lines will all have the same ground potential, in one common location, for passing the surge away from your equipment.

Stage 2: Secondary Protection for Point of Use

A quality Cutler-Hammer SurgeTrap surge strip is recommended for sensitive electronic loads like computers or entertainment centers. Using a SurgeTrap surge strip (stage 2) reduces any voltage remnant down to an acceptable level.

Features, Benefits and Functions

Stage 1 Primary Protection

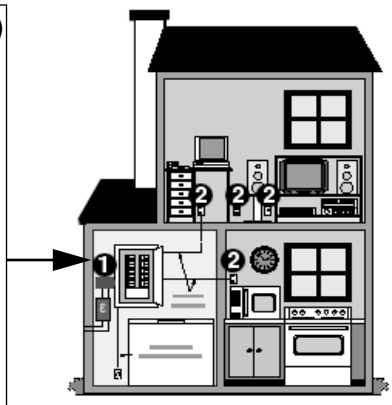
AC Power (also includes cable/telephone)

- CHSP Micro™
- CHSP Max™
- CHSP Ultra™
- CHSP 3-Way™

CHSP products for mounting at the breaker panel.

Accessories

- SurgeTel™
- SurgeCable™
- SurgeEthernet™
- Flushmount Kit™



Two-Stage Protection

Stage 2 Secondary Protection

Point-of-Use

- SurgeTrap™ Micro
- SurgeTrap™ Max
- SurgeTrap™ Ultra
- SurgeTrap™ ValueLine

Figure 10-2. Surge Protection Home Solutions

Product Selection

Table 10-2. Residential Surge Products

Product	Protection Levels and Application	Features	Warranty	Installation/ Enclosure	Catalog Number	Price U.S. $
Stage 1						
CHSP Micro™	Basic surge protection for appliances	■ Surge current rating 20 kA ■ Metal enclosure ■ Easy to install mounting	2 year product warranty ①	Indoor/Outdoor enclosure	**CHSPMICRO** **CHSPMICRO230INT**	130.00 130.00
CHSP Max™	Standard surge protection for major appliances and home electronics	■ Surge current rating 50 kA ■ Thermal fusing ■ Compact, small footprint ■ Status monitor	5 year product warranty ① $10,000 connected equipment	Indoor/Outdoor enclosure Flushmount kit available	**CHSPMAX** **CHSPMAX230INT**	225.00 235.00
CHSP 3-Way™	Standard 3-way protection (AC power, phone, cable) for all home electronic equipment	■ Surge current rating 40 kA ■ 4 telephone lines ■ 1 cable/satellite line	5 year product warranty ① $10,000 connected equipment	Indoor/Flush-mount enclosure	**CHSPCHSR4P**	492.00
CHSP Ultra™	Ultimate surge protection for major appliances, home electronics, computers/home office and entertainment systems	■ Surge current rating 70 kA ■ Audible alarm ■ Thermal fusing	Lifetime product warranty ① $50,000 connected equipment	Indoor/Outdoor enclosure Flushmount kit available	**CHSPULTRA**	425.00
Accessories						
SurgeTel™	Telephone/Modems	■ 4 Telephone Lines	—	—	**DHW4PT**	207.00
SurgeCable™	Cable/Satellite TV	■ 2 Cable/Satellite Lines	—	—	**DCXCAB2**	145.00
SurgeEthernet™	Ethernet	■ Protection for High Speed Internet	—	—	**DRJ45D30R**	228.00
Flushmount Kit™	Cover for CHSP Max or Ultra when used on finished wall	—	—	—	**CHSPFMKIT**	52.00
Stage 2						
SurgeTrap™ Micro	Appliances	■ 3 Outlets; Wallmount	5 year product warranty $1,500 connected equipment	— — —	**SGXMICROAC** ② **SGXMICRONET** ③ **SGXMICROTV** ④	47.25 58.00 62.50
SurgeTrap™ Max	Less critical electronic equipment	■ 7 Outlets; Angled plug-in	Lifetime product warranty $5,000 connected equipment	— — —	**SGXMAXAC** ② **SGXMAXNET** ③ **SGXMAXTV** ⑥	102.00 116.00 116.00
SurgeTrap™ Ultra	Home entertainment systems and computer/ home office	■ 8 Outlets; Angled plug-in ■ Transformer spacing ■ Series filter and TCO fuses	Lifetime product warranty $25,000 connected equipment	— — — —	**SGXULTAC** ② **SGXULTNET** ③ **SGXULTTV** ④ **SGXULT3WAY** ⑤	198.00 214.00 225.00 290.00
SurgeTrap™ ValueLine	Basic surge protection	■ 6 outlets	5 year product warranty	— —	**SGXVAL6** ⑦ **SGXVAL15** ⑧	64.50 89.50

① Warranty coverage applicable when CHSP products are used in conjunction with SurgeTrap point of use strips and appropriate cable and telephone protectors (see accessories).
② AC Power
③ AC + Telephone/Modem
④ AC + Cable
⑤ AC + Telephone/Modem + Cable
⑥ AC Power and Coaxial Cable
⑦ 6 Foot Cord
⑧ 15 Foot Cord

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Discount Symbol **22-CD**

Surge Protection

CHSP (Cutler-Hammer Home Surge Protector)

Stage 1: Primary Protection for Service Entrance

The best place to install surge protection is at the electrical entrance point to your home. The service entrance (loadcenter or breaker panel) is often where AC power, telephone lines and cable lines are located. Applying a CHSP product to your service entrance (stage 1) will reduce a voltage surge to an acceptable level for appliances and surge strips. For added protection, it is recommended that you install surge protection for your cable and telephone lines (see accessories) at the service entrance. The benefit of installing these products is that your AC, cable and telephone lines will all have the same ground potential, in one common location, for passing the surge away from your equipment.

SurgeTrap™ Family

Stage 2: Secondary Protection for Point of Use

A quality Cutler-Hammer SurgeTrap surge strip is recommended for sensitive electronic loads like computers or entertainment centers. Using a SurgeTrap surge strip (stage 2) reduces any voltage remnant down to an acceptable level.

For more information, see surge **Section 10**.

Table 3-36. Residential Surge Products

Product		Catalog Number	Price U.S. $
Stage 1			
CHSP Micro™		**CHSPMICRO** **CHSPMICRO230INT**	130.00 130.00
CHSP Max™		**CHSPMAX** **CHSPMAX230INT**	225.00 235.00
CHSP 3-Way™		**CHSPCHSR4P**	466.00
CHSP Ultra™		**CHSPULTRA**	414.00
Accessories			
SurgeTel™		**DHW4PT**	207.00
SurgeCable™		**DCXCAB2**	145.00
SurgeEthernet™		**DRJ45D30R**	228.00
Flushmount Kit™		**CHSPFMKIT**	52.00
Stage 2			
SurgeTrap™ Micro		**SGXMICROAC** ① **SGXMICRONET** ② **SGXMICROTV** ③	47.25 58.00 62.50
SurgeTrap™ Max		**SGXMAXAC** ① **SGXMAXNET** ② **SGXMAXTV** ⑤	102.00 116.00 116.00
SurgeTrap™ Ultra		**SGXULTAC** ① **SGXULTNET** ② **SGXULTTV** ③ **SGXULT3WAY** ④	198.00 214.00 225.00 207.00
SurgeTrap™ ValueLine		**SGXVAL6** ⑥ **SGXVAL15** ⑦	64.50 89.50

① AC Power
② AC + Telephone/Modem
③ AC + Cable
④ AC + Telephone/Modem + Cable
⑤ AC Power and Coaxial Cable
⑥ 6 Foot Cord
⑦ 15 Foot Cord

Discount Symbol **22-CD**

Application Recommendations

Table 10-1. Application Guide for Surge Products

Application Type	Cutler-Hammer Surge Products	Features and Competitive Advantages
Residential		
■ Home office ■ 120/240V loads	■ CHSP™ Whole Home Surge Protector ■ SurgeTrap™ plug-in surge protection	■ CHSP protects all residential loads ■ Only product available with three levels of protection (AC, telephone, cable) ■ Single point ground eliminates differential ground voltages ■ SurgePlane™ construction ■ Value-added package for contractors and home builders
Light Commercial		
■ Design build ■ Chain stores ■ Small facilities	■ Clipper VL ■ Clipper Power System Retrofit (seven models) ■ Clipper Power System Integrated (seven models) ■ AEGIS-PR powerline filter for cash registers and ATM machines (industrial grade) ■ SurgeTrap plug-in surge protection (commercial grade)	■ Ideal package for any commercial facility ■ Cost-effective protection using CPS-B or CVL protection ■ AEGIS-PR has extremely high level of common mode noise filtering for cash registers, ATMs and other critical electronic loads
Large Projects		
Including: ■ Commercial ■ Government ■ Schools ■ Institution ■ Military	■ Clipper Power System Integrated (seven models) available in panelboards switchboards, MCCs, switchgear, busway and automatic transfer switches ■ Clipper VL ■ Clipper Power System Retrofit (seven models) ■ Data signal link protectors ■ AEGIS for critical load applications ■ Power Conditioners (models: SRT and EVR)	■ Able to meet any competitor TVSS specification ■ Significant performance advantage using integrated Clippers (the preferred choice of consultants) ■ Quick ship capabilities from satellites and service centers ■ The industry's most comprehensive diagnostics ensure safe operation ■ Third party tested
Industrial		
Including: ■ Small and large facilities ■ WWTP	■ Clipper MCC (Motor Control Center) ■ Clipper VL ■ Clipper Power System Integrated and Retrofit (switchgear, switchboards, busway, panelboards and automatic transfer switches) ■ AEGIS powerline filters for critical loads (PLCs, robotics, etc.) ■ Reflected Wave Trap (RWT) ■ Datacom protectors ■ Volt Shield (swell / sag controller) ■ Sag Ride Through (SRT) power conditioner ■ Electronic Voltage Regulator (EVR)	■ Clipper MCC offers surge suppression for drives (available for retrofit and new installations) ■ AEGIS products are industry leaders for critical load protection (DIN rail mounting, extended warranty for connected loads) ■ Facility-wide solutions ■ Protection for drive/motor applications ■ SRT — power conditioning for voltage sag problems ■ EVR — ideal for voltage regulation problems
OEM		
Any OEM customer including: ■ Integrators ■ Medical equipment ■ Automation and control ■ Traffic control	■ Clipper Power System Caseless and Retrofit ■ Clipper VL ■ AEGIS powerline filter ■ DC, DC+ filters ■ Other custom components ■ Reflected Wave Trap (RWT) ■ Power conditioners ■ Datacom protectors	■ 20 years experience in OEM applications ■ Ability to meet customized requirements ■ Application engineering assistance ■ CE approval (AEGIS filters) ideal for international integrators ■ Small footprint series and parallel power filters
Telecommunications		
Including: ■ Cellular sites ■ Microwave ■ PCS ■ Paging systems	■ Tc Panelboards (clipper TVSS, transfer switch) ■ QuarterWave (TQP) protectors for RF coaxial lines ■ AEGIS+ ■ Clipper VL ■ DC protectors ■ Volt shield (sag / swell protection) ■ Engineering design support	■ Complete solution for protecting cellular (or PCS, microwave, GPS) base stations ■ Independently tested at lightning labs ■ Experience in worldwide applications ■ Ability to meet customized requirements

Product Description

Cutler-Hammer Surge Protector (CHSP)

The Cutler-Hammer Surge Protector (CHSP) is an externally mounted unit that provides industrial level surge protection in a residential design. The CHSP is available in four models and provides protection for all residential electrical equipment by reducing power surges, often caused by lightning, to an acceptable level for appliances and electronics. These units can be mounted into any manufacturer's breaker panel.

Cutler-Hammer Surge Protectors for Telephone and Cable

Cutler-Hammer also offers a full range of accessory products for telephone and cable, including SurgeTel which protects up to four telephone/modem lines; SurgeCable which protects up to two cable/satellite lines; and SurgeEthernet featuring protection for high-speed Internet hookups.

SurgeTrap™

Cutler-Hammer's SurgeTrap, plug-in surge protectors offer exceptional protection for electrical and electronic devices. Each of the SurgeTrap Ultra, Max and Micro are available in AC only, AC plus telephone/modem and AC plus cable. The SurgeTrap ULTRA 3-Way, in addition to having the above options, is available in AC plus telephone/modem and cable. SurgeTrap ValueLine products are also available.

Application Description

Two-Stage Protection

The Institute of Electrical and Electronic Engineers (IEEE) recommends two stages of surge suppression to provide the best protection for electronic equipment. Two-stage surge suppression should be provided for all cables entering a home, including power, Internet, coaxial and telephone.

Stage 1: Primary Protection for Service Entrance

The best place to install surge protection is at the electrical entrance point to your home. The service entrance (loadcenter or breaker panel) is often where AC power, telephone lines and cable lines are located. Applying a CHSP product to your service entrance (stage 1) will reduce a voltage surge to an acceptable level for appliances and surge strips. For added protection, it is recommended that you install surge protection for your cable and telephone lines (see accessories) at the service entrance. The benefit of installing these products is that your AC, cable and telephone lines will all have the same ground potential, in one common location, for passing the surge away from your equipment.

Stage 2: Secondary Protection for Point of Use

A quality Cutler-Hammer SurgeTrap surge strip is recommended for sensitive electronic loads like computers or entertainment centers. Using a SurgeTrap surge strip (stage 2) reduces any voltage remnant down to an acceptable level.

Features, Benefits and Functions

Stage 1 Primary Protection

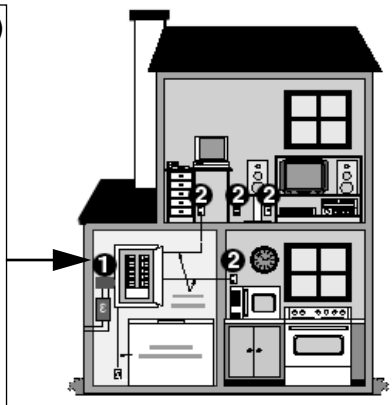
AC Power (also includes cable/telephone)

- CHSP Micro™
- CHSP Max™
- CHSP Ultra™
- CHSP 3-Way™

CHSP products for mounting at the breaker panel.

Accessories

- SurgeTel™
- SurgeCable™
- SurgeEthernet™
- Flushmount Kit™



Two-Stage Protection

Stage 2 Secondary Protection

Point-of-Use

- SurgeTrap™ Micro
- SurgeTrap™ Max
- SurgeTrap™ Ultra
- SurgeTrap™ ValueLine

Figure 10-2. Surge Protection Home Solutions

Product Selection

Table 10-2. Residential Surge Products

Product	Protection Levels and Application	Features	Warranty	Installation/ Enclosure	Catalog Number	Price U.S. $
Stage 1						
CHSP Micro™	Basic surge protection for appliances	■ Surge current rating 20 kA ■ Metal enclosure ■ Easy to install mounting	2 year product warranty ①	Indoor/Outdoor enclosure	**CHSPMICRO** **CHSPMICRO230INT**	130.00 130.00
CHSP Max™	Standard surge protection for major appliances and home electronics	■ Surge current rating 50 kA ■ Thermal fusing ■ Compact, small footprint ■ Status monitor	5 year product warranty ① $10,000 connected equipment	Indoor/Outdoor enclosure Flushmount kit available	**CHSPMAX** **CHSPMAX230INT**	225.00 235.00
CHSP 3-Way™	Standard 3-way protection (AC power, phone, cable) for all home electronic equipment	■ Surge current rating 40 kA ■ 4 telephone lines ■ 1 cable/satellite line	5 year product warranty ① $10,000 connected equipment	Indoor/Flush-mount enclosure	**CHSPCHSR4P**	492.00
CHSP Ultra™	Ultimate surge protection for major appliances, home electronics, computers/home office and entertainment systems	■ Surge current rating 70 kA ■ Audible alarm ■ Thermal fusing	Lifetime product warranty ① $50,000 connected equipment	Indoor/Outdoor enclosure Flushmount kit available	**CHSPULTRA**	425.00
Accessories						
SurgeTel™	Telephone/Modems	■ 4 Telephone Lines	—	—	**DHW4PT**	207.00
SurgeCable™	Cable/Satellite TV	■ 2 Cable/Satellite Lines	—	—	**DCXCAB2**	145.00
SurgeEthernet™	Ethernet	■ Protection for High Speed Internet	—	—	**DRJ45D30R**	228.00
Flushmount Kit™	Cover for CHSP Max or Ultra when used on finished wall	—	—	—	**CHSPFMKIT**	52.00
Stage 2						
SurgeTrap™ Micro	Appliances	■ 3 Outlets; Wallmount	5 year product warranty $1,500 connected equipment	— — —	**SGXMICROAC** ② **SGXMICRONET** ③ **SGXMICROTV** ④	47.25 58.00 62.50
SurgeTrap™ Max	Less critical electronic equipment	■ 7 Outlets; Angled plug-in	Lifetime product warranty $5,000 connected equipment	— — —	**SGXMAXAC** ② **SGXMAXNET** ③ **SGXMAXTV** ⑥	102.00 116.00 116.00
SurgeTrap™ Ultra	Home entertainment systems and computer/ home office	■ 8 Outlets; Angled plug-in ■ Transformer spacing ■ Series filter and TCO fuses	Lifetime product warranty $25,000 connected equipment	— — — —	**SGXULTAC** ② **SGXULTNET** ③ **SGXULTTV** ④ **SGXULT3WAY** ⑤	198.00 214.00 225.00 290.00
SurgeTrap™ ValueLine	Basic surge protection	■ 6 outlets	5 year product warranty	— —	**SGXVAL6** ⑦ **SGXVAL15** ⑧	64.50 89.50

① Warranty coverage applicable when CHSP products are used in conjunction with SurgeTrap point of use strips and appropriate cable and telephone protectors (see accessories).
② AC Power
③ AC + Telephone/Modem
④ AC + Cable
⑤ AC + Telephone/Modem + Cable
⑥ AC Power and Coaxial Cable
⑦ 6 Foot Cord
⑧ 15 Foot Cord

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Discount Symbol **22-CD**