

HERMATIC

SURGE PROTECTIVE DEVICE
ANSI/UL1449 4th EDITION

LE
SWITCH

CC2060

2 POLE

HERMATIC
Consumable Surge Module

POWER



PROTECTION

ON: PROTECTED
OFF: REPLACE

HERMATIC

POWER



PROTECTION

ON: PROTECTED
OFF: REPLACE

HERMATIC

POWER



PROTECTION

ON: PROTECTED
OFF: REPLACE

OFF

WARNING Risk of Electric Shock

- Turn Module Power Switch to "OFF" position before replacing Consumable Surge Modules. Module Power Switch is NOT used as an over-current protection device (OCPD).
- Mettez l'interrupteur d'alimentation de module en position d'arrêt (OFF) avant de changer les modules anti-surintensité consommables. L'interrupteur d'alimentation de module ne sert PAS de dispositif de protection contre les surintensités.

WARNING Risk of Electric Shock

- Disconnect power to unit at power source before servicing internal wiring for installation or maintenance. Replace main fuse after servicing or installation. Service to be performed by qualified personnel only.



Surge Protection

Did you know homeowners and businesses lose an estimated \$250-\$500 million* each year in property damage caused by power surge incidents? Avoid an unexpected disaster with trusted Surge Protection solutions from Intermatic. Our complete line of surge protective devices helps shield single-family homes, commercial office spaces, manufacturing facilities, HVAC/R equipment and more from the harmful effects of power surge events. Every modern facility can benefit from added protection.

Steadfast and dependable, our Smart Guard® Whole Home Surge Protection System helps families protect their most expensive gadgets and appliances from surge damage and is backed by an impressive 10-year warranty. Covering everything from high-definition TVs and surround sound systems to refrigerators and washing machines, it's a comprehensive yet simple solution that offers homeowners peace of mind.

* National Lightning Detection Network

Contents

Education	106
Type 1 or 2 SPD for Residential and Light Commercial	110
Type 3 SPD for Commercial and Industrial	113
Type 2 SPD - Includes Telephone and Coax Line Protection	114
Telephone or Coax Line Surge Protection	114
Type 1 or 2 SPD for Light Commercial and Outdoor	115

Causes of Power Disturbances

Electrical disturbances and downtime cost North American companies and residents more than \$26 billion every year. Fluctuations in utility power (caused by grid switching, for example) are often suspected to be the main culprits. However, the overwhelming cause of power disturbances is actually from transient voltage surges from equipment inside a facility. In fact, it is estimated that 65% of all transient voltage surges are generated from inside sources, while only 35% come from outside.* Triggers of transient surges can range from the stopping and starting of motors, appliances and electronics, to even the simple action of switching lights ON and OFF.

** NEMA Surge Protection Institute*

What Requires Surge Protection?

Every process and appliance within a building is controlled by electrical equipment and electronic components. Virtually all devices that are powered by electricity are vulnerable. The following types of systems will benefit from surge protection:

- Home Theater Systems
- Computers/Peripherals/Servers
- HVAC/R Systems and Controls
- Electronically Commutated Motors
- Pool and Spa Systems and Controls
- Smartphones/Tablets/Gaming Systems
- Charging Equipment for Hybrid and Electric Cars
- Variable Frequency Drives
- Security and Fire Alarm Systems
- Programmable Logic Controllers
- Network Servers/Routers/Modems
- Lighting Ballasts
- Uninterruptible Power Supplies
- Home Automation Controls
- Pumps, Motors and Related Equipment with Electronic Controls or Starters
- Telecom Equipment
- Generator Automatic Transfer Switches (ATS)



ANSI/UL 1449, 3rd Edition, Surge Protection Compliance

UL 1449, 2nd Edition, underwent a major revision requiring additional safety testing at medium-fault current levels for Transient Voltage Surge Suppressors (TVSS).

UL 1449, 3rd Edition, was published in September 2006 with compliance required by September 2009. The major differences are:

- UL 1449, 3rd Edition, is now an American National Standard (ANSI)
- Change in terminology from Transient Voltage Surge Suppressors to Surge Protective Devices (SPD)
- Voltage Protection Rating (VPR) is now tested at 6 kV/3 kA.
- Nominal Discharge Current (In) is a new addition.

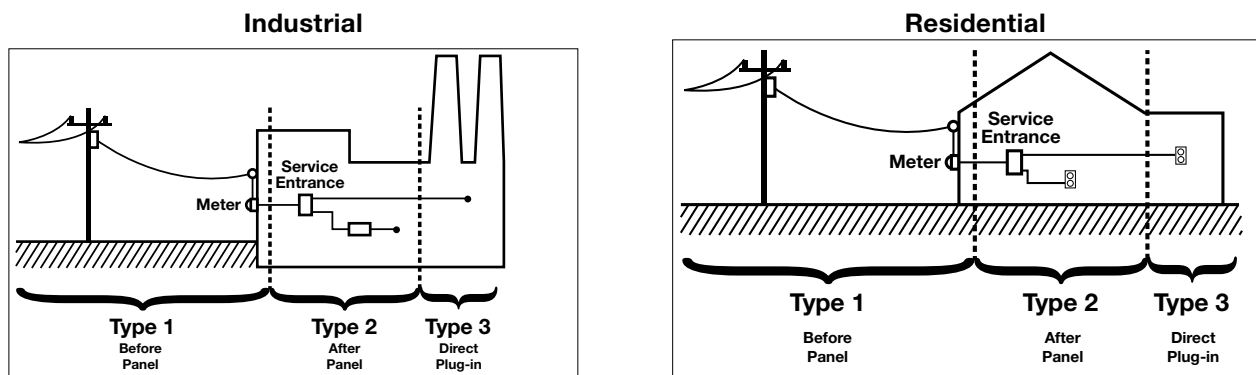
Terminology Change

The full title of UL 1449, 2nd Edition, is, “Standard for Safety for Transient Voltage Surge Suppressors, UL 1449”.

The new title of UL 1449, 3rd Edition, is, “Standard for Safety for Surge Protective Devices, UL 1449.” “Surge Protective Devices” is a more general description and covers devices beyond what we formerly called TVSS. The term SPD also covers what are referred to as Secondary Surge Arrestors.

UL 1449, 3rd Edition, gives five designations to surge protective devices depending on where in the electrical system the device is connected. Below defines Types 1-3.

- Type 1** — Permanently connected device installed before or after the service disconnect overcurrent device and intended to be installed with no external overcurrent protective device. This type of SPD most closely relates to devices that were called secondary surge arrestors prior to 3rd Edition.
- Type 2** — Permanently connected device installed after the service disconnect overcurrent device. This type of SPD most closely relates to devices that were called transient voltage surge suppressors prior to 3rd Edition.
- Type 3** — Point of use SPDs that are installed with a minimum of 30 feet of conductor length from the service panel. These 30 feet of conductor length does not include conductors used to attach the SPD. Some examples of Type 3 SPDs are cord connected, direct plug-in and receptacle type SPDs.



Voltage Protection Rating (VPR)

The measured limiting voltage test in UL 1449, 3rd Edition, uses a 6 kV/3 kA combination wave surge to determine the Voltage Protection Rating (VPR) of the SPD. This test is similar to the Suppressed Voltage Rating (SVR) as performed in UL 1449, 2nd Edition. The key difference between the tests in 2nd Edition and 3rd Edition is that the magnitude of the current used for the test is six times greater in 3rd Edition versus 2nd Edition. This much higher current level will mean that the Voltage Protection Rating (VPR) will likely be significantly higher.

Nominal Discharge Current (In)

The addition of the nominal discharge current test is new to UL 1449 3rd Edition. The nominal discharge current value is selected by the manufacturer and can be either 10 kA or 20 kA for a Type 1 SPD or 3 kA, 5 kA, 10 kA or 20 kA for Type 2 SPDs. The SPD is tested by being subjected to a total of 15 impulses of the manufacturer-selected nominal discharge current.

Joule Ratings

Many end users look at Joule ratings to determine which surge protector to purchase. Unfortunately, Joule ratings can be misleading according to IEEE research. When a surge protector is submitted for third party agency testing, Joule rating is not a tested parameter. Joule ratings are an unreliable measurement for determining a product's surge protection capacity because there is no clear standard for energy ratings of SPDs on Joules.

Typical Surge Protective Device (SPD) Applications



Entertainment
Home Theaters, TV,
Stereos



Home Office,
Computers, Tablets,
Printers



Home Automation,
Thermostats, Security,
Lighting



HVAC, Generators,
Solar



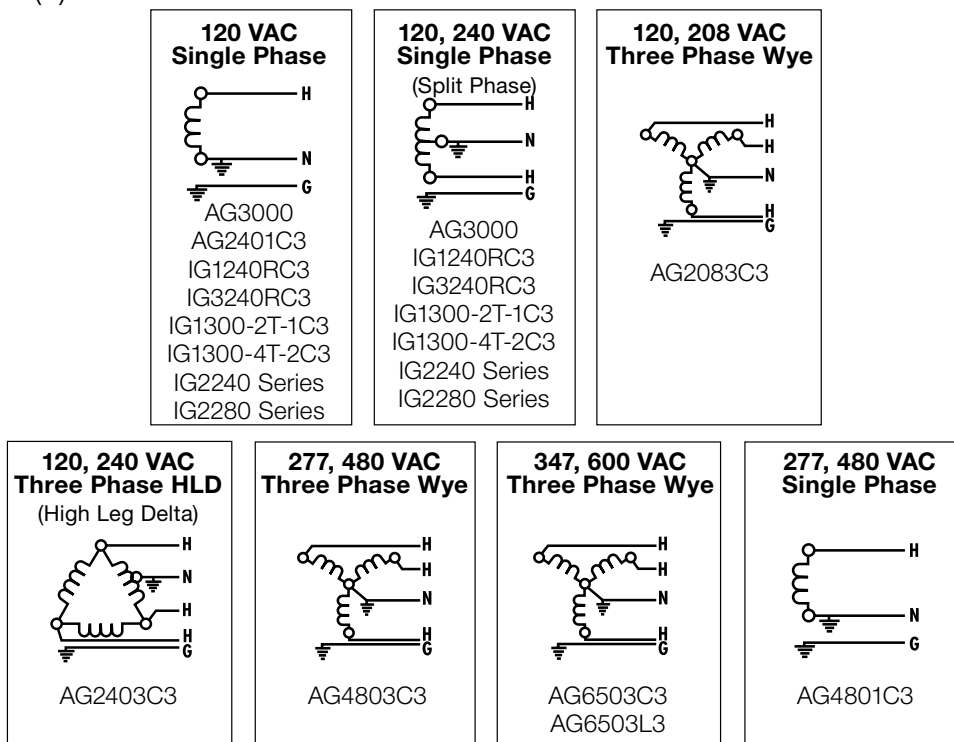
Pool & Spa
Equipment, Water
Heater, Landscape
Lighting



Mini-split, Furnace/
Air Handler, Boilers

Common Voltage Configurations

The wiring diagrams below illustrate the common voltage configurations for Intermatic surge products. Locate the desired voltage configuration and surge protector part number, and then go to the applicable product page to order the desired item(s).



Note: All SPDs protect against surges that travel along the electrical pathway and are not applicable to direct lightning strikes that travel down non-electrical paths. Be sure to have at least a 20 A dual pole breaker(s) to help prevent the circuits from shorting. Type 1 SPDs are normally mounted before panels, which would not include a breaker.

Surge Glossary

Maximum Continuous Operating Voltage (MCOV): The maximum RMS voltage that may be applied to each mode of a surge protection device. (Listed on the product)

Modes Of Protection: Electrical paths within a system which an SPD offers defense against surge events. Examples of protection include, Line to Neutral (L-N), Line to Ground (L-G), Line to Line (L-L) and Neutral to Ground (N-G). (Listed on the product)

Nominal Discharge Current (In): Peak value of the current through the SPD having a current wave shape of 8/20 where the SPD remains functional after 15 surges. (Listed on the product)

Nominal System Voltage: The voltage level at which a system normally operates. Nominal system voltages include, but are not limited to, 120, 208, 240, 277, 347, 480, 600 VAC. (Listed on the product)

Short Circuit Current Rating (SCCR): The measurement of how much current the electrical system can supply during a fault condition. This value determines where an SPD may be installed. (Listed on the product)

Surge: A sudden and sharp increase of current or voltage within electric circuits.

Surge Protective Device (SPD): A device used to limit a surge on equipment by diverting or limiting it. SPDs were previously known as Transient Voltage Surge Suppressors or secondary surge arresters.

Voltage Protection Rating (VPR): The value assigned by UL which specifies the measured limited voltage value of the SPD. VPR rating is formally known as the "suppressed voltage rating". (Listed on the product)

IG Series

Point-of-Use Surge Strips

Type 3 Point-of-Use Surge Protective Devices (SPD) are designed for heavy industrial use with 3 modes of surge protection (L-N, L-G, N-G). Features a 15 A resettable breaker and #14 AWG SJT power cord with molded plug. CSA certified to ANSI/UL 1449, 3rd Edition.

Applications

- Commercial • Industrial

Features

- Three Modes of protection
- Metal Oxide Varistor (MOV) surge protection technology
- 15 A resettable breaker
- #14 AWG SJT power cord with molded plug
- LED protection indicator
- Extruded aluminum housing
- 5-year product warranty
- \$5,000, \$10,000 or \$25,000 connected equipment warranties on appliances and electronics
- CSA certified to ANSI/UL 1449, 3rd Edition

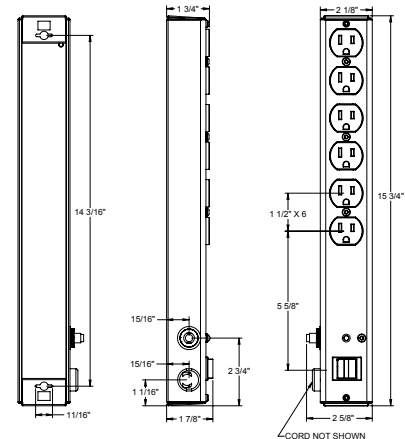
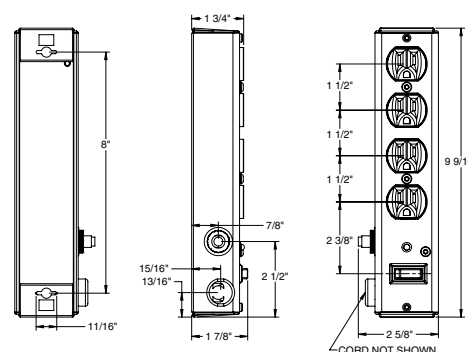
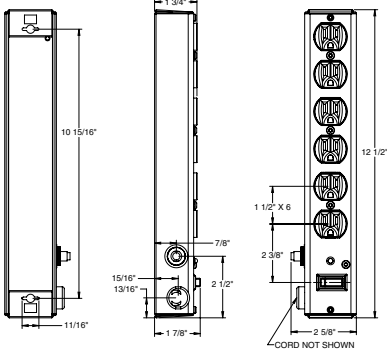


IG112463



IG112663

Dimensions



Dimensions for IG112663, IG112663BLK10

Dimensions for IG112463

Dimensions for IG206153, IG20B123, IG2012B153

Model #	Voltage Protection Rating (V)	Cord Length	Outlets	Illuminating ON/OFF Switch	EMI/RFI Noise Filtration	Color	Product Warranty	Connected Equipment Warranty
IG112463	L-N 700 V	6'	4	Yes	No	White	5-year limited	5-year /\$10,000
IG112663	L-G 600 V	6'	6	Yes	No	White	5-year limited	5-year / \$10,000
IG112663BLK10	N-G 600 V	10'	6	Yes	No	Black	5-year limited	5-year / \$10,000
IG206153	L-N 400 V L-G 400 V N-G 500 V	15'	6	No	Yes	White	5-year limited	5-year / \$25,000
IG20B123	L-N 700 V	6'	6	No	Yes	White	5-year limited	5-year / \$5,000
IG2012B153	L-G 600 V N-G 600 V	15'	6	No	Yes	White	5-year limited	5-year / \$5,000

Accessories

Mounting Bracket Plate for all IG strips; Extruded Aluminum Alloy; 6" x 1 15/16" (152 mm x 50 mm)

24EG5133



24EG5133



Ratings	
Service Voltage	125 VAC, 15 A, 60 Hz
SPD	Type 3
MCOV*	130
Surge Protection Technology	MOV
Operating Temperature	-4° F to 104° F (-20° C to 40° C)
Dimensions	See dimension drawings above
Warranty	5-year limited

*Maximum Continuous Operating Voltage