Surge

Retail Space ***Light Industrial Manufacturing***

Servers Pumps Motors **Facilities**

Health Care Facilities ***Lighting Ballasts***

Institutional Buildings ***Single Residences*** Modems

Telecom Equipment ***Multi-Family Residences***

Security Systems **Televisions** Computers

HVAC Hospitality **Commercial Office Spac**

What is Surge Protection?

ANSI/IEEE defines common electrical disturbances that occur in modern facilities as: Voltage, Waveform, Current Waveform, and 100 kHz Ring Wave. Depending on the proximity of the equipment to your power entry points, the severity increases. As the transient surge event propagates throughout your building, it degrades your electronic components with excess voltage and current.

ANSI/UL 1449 3rd Edition Surge Protection Definitions

As of September 30, 2009 ANSI/UL 1449 3rd Edition replaced UL 1449 2.5. SPDs manufactured after September 30, 2009 need to meet ANSI/UL 1449 3rd Edition standards. Any products manufactured before this date may still be sold as a UL 1449 2.5 compliant product. Electrical components in devices are susceptible to transient surge overvoltage and can create significant downtime, equipment replacement, and costly repairs.

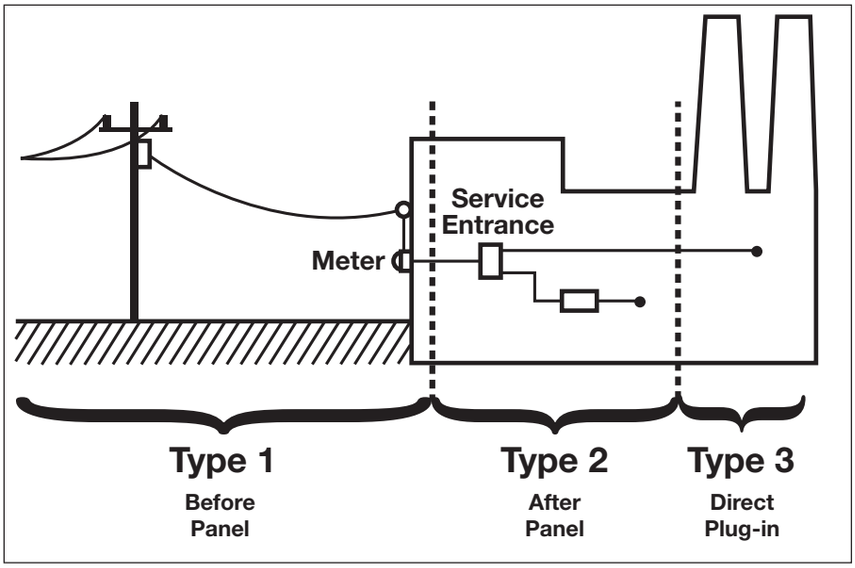
Surge Protective Devices (SPDs) are classified into Type 1, Type 2 and Type 3.

TYPE 1: Permanently connected SPD is installed between the secondary transformer and the line side of the service equipment.

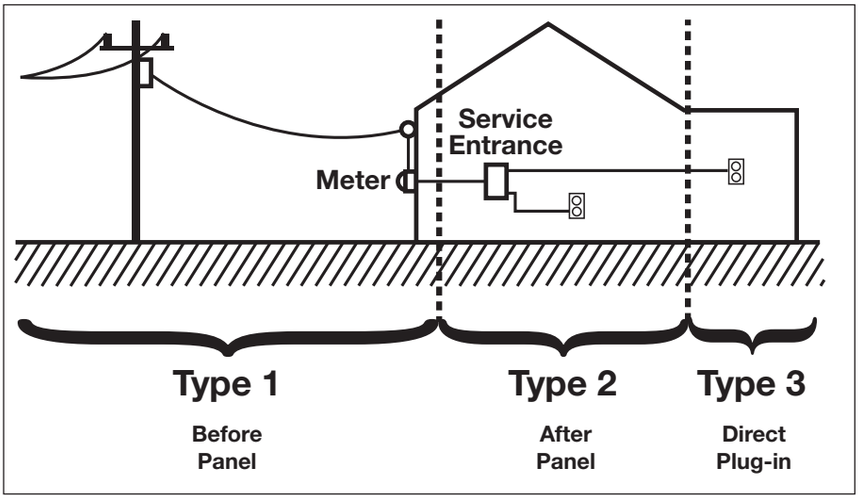
TYPE 2: Permanently connected SPD is installed on the load side of the service equipment over current device.

TYPE 3: Cord connected SPD is installed at the point of use.

Industrial



Residential



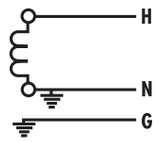
Guidelines to consider when choosing a Surge Protective Device (SPD)

1. **Desired Geographic Location of the SPD**
   a. How much exposure is there to utility grid switching?
   b. Is the location susceptible to brownouts or frequent utility power switching?
2. **Point of Installation.** ***What type of SPD do you need?***
   See SPD classifications on previous page.

Common Voltage Configurations

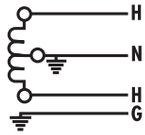
The wiring diagrams below illustrate the common voltage configurations for Intermatic surge products. Locate the desired voltage configuration and surge protector part number, and then go to the applicable product page to order the desired item(s).

120 VAC Single Phase



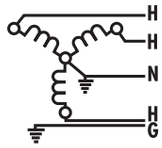
AG3000
AG2401C3

120, 240 VAC Single Phase
(Split Phase)



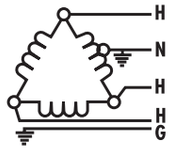
IG1240RC3
IG3240RC3
IG1300-2T-1C3
IG1300-4T-2C3
AG3000

120, 208 VAC Three Phase Wye



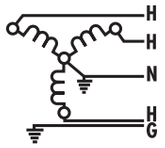
AG2083C3

120, 240 VAC Three Phase HLD
(High Leg Delta)



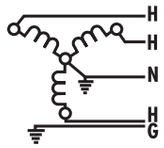
AG2403C3

277, 480 VAC Three Phase Wye



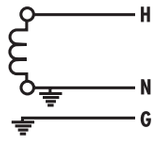
AG4803C3

347, 600 VAC Three Phase Wye



AG6503C3
AG6503L3

277, 480 VAC Single Phase



AG4801C3

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 amp 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

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

Surge Protective Device (SPD): A device used to divert or limit a surge on a piece of equipment. SPDs were previously known as Transient Voltage Surge Suppressors or Secondary Surge Arresters.

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)

Nominal Discharge Current: 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)

Modes of Protection: Electrical paths within a system that an SPD defends against surge events, such as 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)

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)

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)

Three Phase WYE: Consists of 3 hot lines or phases, commonly referred to as X, Y, Z, a neutral and ground wire for a total of 5 wires in a power distribution cable.

High Leg Delta: Type of electrical service connection for three phase electric power installations. It is one of the several types of three phase service setups. It is used to provide an additional voltage that is half the phase to phase voltage.

Why Surge Protection Matters to You

Surge Protection is one of the most overlooked safeguards. Most people protect their electronics but leave more valued equipment unsecured from surges and spikes. An estimated $250-$500 million* a year is lost from property damage caused by power surges and spikes.

Don't be the next victim. Safeguard your equipment with Intermatic Surge Protection. Intermatic offers a complete line of surge protective devices for single family residences, commercial office spaces, H ACR equipment, and pool/spas. It covers everything from irrigation and farm equipment to pumps, lighting fixtu es, traffic lights, and motors.

Why take the costly risk?
Invest in peace of mind with Intermatic surge protective devices.

*National Lightning Detection Network

AG3000

HVAC Surge Protective Device

AG3000
HVAC Surge Protective Device

- Meets ANSI UL1449 3rd Edition Standards
- 120/240 VAC single split phase SPD for use on a variety of HVAC equipment
- Green LED protection indicator
- Type 4x enclosure
- ½" x 20 threaded nipple (weatherproof and UV resistant)
- TPMOV™ technology
- 3 modes of protection
- 3 leads
- 18" lead length
- 10 gauge leads
- 3-year warranty
- $7,500 connnected equipment warranty

Model #	Service Voltage	SPD Type	Nominal Discharge Current	MCOV*		Wiring Configuration	SCCR**	Voltage Protection Rating (VPR)		
				L-N	L-L			L-N/G	N-G	L-L
AG3000	120/240 VAC	1 or 2	10kA	150V	300V	L1, L2, L/N-G	20kA	600		900

** MCOV Maximum Continuous Operation Voltage*
** *SCCR Short Circuit Current Rating*

A.

IG1200RC3
Plastic Housing

- Type 1 or 2 SPD applications
- Green LED indicator provides status of protection
- Type 3R rainproof enclosure
- 5.65" H x 4.18" W x 3.33" D
- 3 modes of surge protection (L1-N, L2-N, L1-L2)
- 3-year product warranty
- $7,500 connected equipment warranty for 3 years on appliances and electronics

B.

IG1240RC3
Plastic Housing

- Type 1 or 2 SPD applications
- Green LED indicator provides status of protection
- Type 3R rainproof enclosure
- 5.65" H x 4.18" W x 3.33" D
- 6 modes of surge protection: L1-N, L2-N, L1-G, L2-G, N-G, L1-L2
- 5-year product warranty
- $10,000 connected equipment warranty for 5 years on appliances and electronics

C.

IG3240RC3
Metal Housing

- Type 1 or 2 SPD applications
- Green LED indicator provides status of protection
- Type 3R rainproof enclosure
- 5.28" H x 4.4" W x 3.25" D
- 6 modes of surge protection L1-N, L2-N, L1-G, L2-G, N-G, L1-L2
- 10-year product warranty
- $25,000 connected equipment warranty for 10 years on appliances and electronics

	Model #	Service Voltage	No. of Leads	Lead Length	Wiring Config.	Nominal Discharge Current	MCOV*	SCCR**	Voltage Protection Rating (VPR)				
									L-N/G	L-N	L-G	N-G	L-L
A.	**IG1200RC3**	120, 240 VAC	3	30"	L1, L2, N/G	20 kA	150 L-N, N-G† 300 L-L, L-G†	50 kA	700				1200
B.	**IG1240RC3**	120, 240 VAC	4	30"	L1, L2, N, G	20 kA		50 kA		700	1200	700	1200
C.	**IG3240RC3**	120, 240 VAC	4	30"	L1, L2, N, G	20 kA		50 kA		700	1200	700	1200

** MCOV Maximum Continuous Operating Voltage*
***SCCR Short Circuit Current Rating*
†Applies to all models

IG1300-2T-1C3

- Type 2 SPD applications
- 12 gauge wire
- Provides protection for 2 telephone lines (Analog phone line, modem, or DSL) and 1 coax line (cable TV, cable Internet or Satellite TV)
- Type 3R outdoor rainproof enclosure for indoor/outdoor installations (9.38" H x 5.25" W x 4" D)
- 6 modes of surge protection: L1-N, L2-N, L1-G, L2-G, N-G, L1-L2
- 5-year product warranty
- $10,000 connected equipment warranty for 5 years on appliances and electronics

D.

IG1300-4T-2C3

- Type 2 SPD applications
- 12 gauge wire
- Provides protection for 4 telephone lines (Analog phone line, modem, or DSL) and 2 coax lines (cable TV, cable Internet or Satellite TV)
- Type 3R outdoor rainproof enclosure for indoor/outdoor installations (9.38" H x 5.25" W x 4" D)
- 6 modes of surge protection: L1-N, L2-N, L1-G, L2-G, N-G, L1-L2
- 5-year product warranty
- $10,000 connected equipment warranty for 5 years on appliances and electronics

E.

	Model #	Service Voltage	No. of Leads	Lead Length	Wiring Config.	Nominal Discharge Current	MCOV*	SCCR**	Voltage Protection Rating (VPR)				
									L-N/G	L-N	L-G	N-G	L-L
D.	**IG1300-2T-1C3**	120, 240 VAC	4	24"	L1, L2, N, G	20 kA	150 L-N, N-G† 300 L-L, L-G†	50 kA		700	1200	700	1200
E.	**IG1300-4T-1C3**	120, 240 VAC	4	24"	L1, L2, N, G	20 kA		50 kA		700	1200	700	1200

**MCOV Maximum Continuous Operating Voltage*
***SCCR Short Circuit Current Rating*
†Applies to all models

Flushmount Kit

- For IG1200RC3, IG1240RC3 and IG3240RC3
- Includes mounting plate, screws and mounting bracket
- Easy to use

	Model #	H x W
F.	**IG1240FMP33**	7" x 7.5"
G.	**IG3240FMP33**	7" x 7.5"

F.

G.

Protect Your Outdoor Equipment

Irrigation equipment, pumps, lighting fixtu es, traffic signalin devices, farm equipment, HVACR controls and motors

AG Series
Surge Protective Devices

- SPD Type 1/Type 2 applications
- For outdoor installations on service entrances and utility meter cabinets
- UV resistant polycarbonate housing with ½" x 20" nominal nipple
- Type 4 outdoor rainproof enclosure
- Nominal Discharge Current 20 kA
- Green LED protection indicator
- Limited 1-year warranty

AG1BRKT Mounting Bracket

Model #	Poles	Lead Length	Wiring Config.	MCOV*		SCCR**	Voltage Protection Rating (VPR)	
				L-N/G	L-L		L-N/G	L-L
Service Voltage 120/240 VAC								
AG24013	Single Phase	18"	L1, L2, N/G	150	300	50kA	700	1200
AG2401C3	Single Phase	18"	L1, L2, N/G	150	300	50kA	700	1200
Service Voltage 208 VAC								
AG2083C3	3 Pole, 4 Wire	18"	L1, L2, L3, N/G	150	300	50kA	700	1200
Service Voltage 277/480 VAC								
AG48013	Single Phase, 2 Pole, 3 Wire	18"	L1, L2, N/G	320	640	50kA	1200	2000
AG4803C3	3 Pole, 4 Wire	18"	L1, L2, L3, N/G	320	640	50kA	1200	2000
Service Voltage 347/600 VAC								
AG6503C3	3 Pole, 4 Wire	18"	L1, L2, L3, N/G	420	840	50kA	1500	2500
AG6503L3	3 Pole, 4 Wire	36"	L1, L2, L3, N/G	420	840	50kA	1500	2500
Service Voltage 120/208/240 VAC								
AG2403C3	3 Pole, 4 Wire	18"	L1, L2, L3, N/G	150 L1/L3 - N/G 270 L2 - N/G	300 L1-L3 420 L1/L3 - L2	50kA	700 L1/L3 - N/G 1000 L2 - N/G	1200 L1-L3 1500 L1/L3-L2

**MCOV Maximum Continuous Operating Voltage*
***SCCR Short Circuit Current Rating*
To order AG1BRKT Mounting Bracket, see page 154


A.


B.


C.


D.


E.

Surge Protective Strips

Type 3 SPD Point-of-Use

- For heavy-duty industrial use
- 14 gauge SJT power cord with molded plug
- LED protection indicator
- Electrical rating: 15 Amp 125 VAC
- 15 Amp resettable breaker
- 5-year warranty

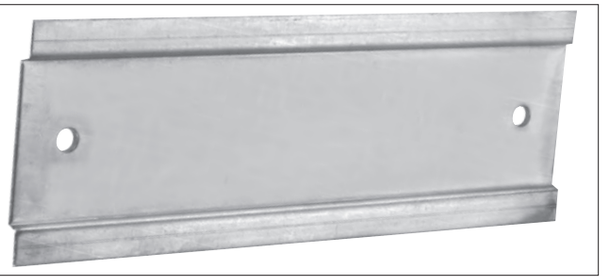
	Model #	Coverage Warranty	Cord Length	Outlets	VPR* L-N/L-G/N-G
	Without EMI/RFI Noise Filtration				
A.	**IG112463†**	$10,000	6'	4	700/600/600
B.	**IG112663†**	$10,000	6'	6	700/600/600
C.	**IG112663BLK10†**	$10,000	10'	6	700/600/600
	With EMI/RFI Noise Filtration				
	Model #	**Coverage Warranty**	**Cord Length**	**Outlets**	**VPR*** L-N/L-G/N-G
D.	**IG20663**	$25,000	6'	6	400/400/500
	IG206153	$25,000	15'	6	400/400/500
E.	**IG20B123**	$5,000	6'	6	700/600/600
	IG2012B153	$5,000	15'	6	700/600/600

**Voltage Protection Rating*
†Comes with illuminating ON/OFF switch

Mounting Bracket Plate

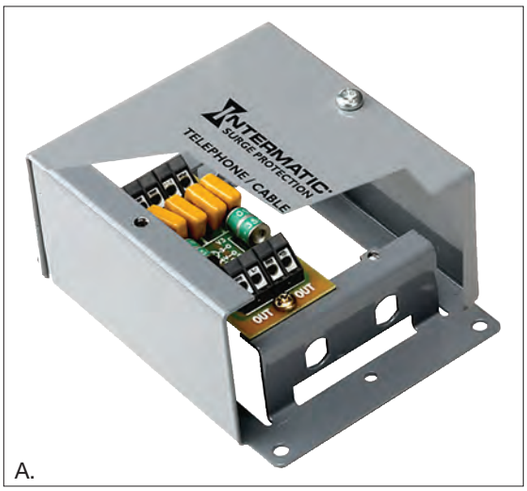
- Secure mounting bracket for all IG strips
- Extruded aluminum alloy

Model #	L x W
24EG5133	6" x 1.95"



Phone, Modem and DSL

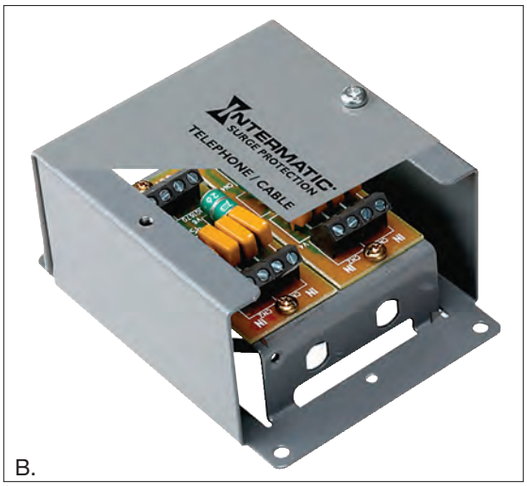
Surge Protective Devices



A.

A. IG2TM

- Protects 2 lines
- Type 1 enclosure
- Tip-To-Ground, Tip-To-Ring and Ring-To-Ground Modes
- 40 kA surge protection per line
- #24 to #16 gauge AWG
- Gas tube protection 350 VDC breakdown
- UL497A



B.

B. IG4TM

- Protects 4 lines
- Type 1 enclosure
- Tip-To-Ground, Tip-To-Ring and Ring-To-Ground Modes
- 40 kA surge protection per line
- #24 to #16 gauge AWG
- Gas tube protection 350 VDC breakdown
- UL497A

C.

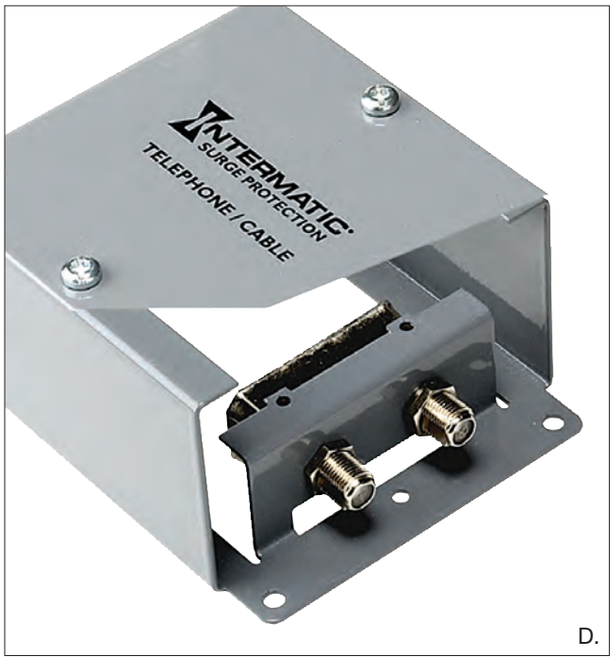
C. IG2T3R

- Protects 2 lines (expandable to 12 Lines)
- Type 3R rainproof enclosure
- Tip-To-Ground, Tip-To-Ring and Ring-To-Ground Modes
- 40 kA surge protection per line
- #24 to #16 gauge AWG
- Gas tube protection 350 VDC breakdown
- UL497A

Model #	Lines	Wire Configuration	Location
A. **IG2TM**	2	4	Indoor
B. **IG4TM**	4	8	Indoor
C. **IG2T3R**	2 (up to 12)	4 (up to 24 wire)	Indoor/Outdoor

Standalone Antenna, Cable Satellite, Cable Internet

Surge Protective Devices



D.

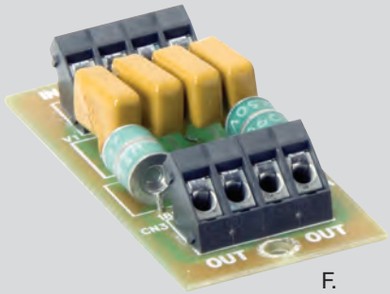
E.

IG1CM & IG1CM3R

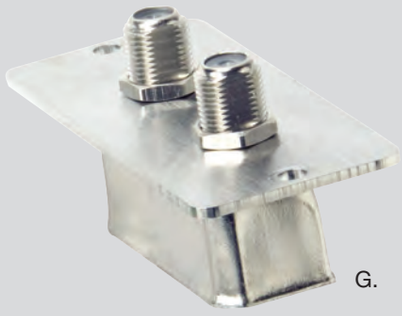
- 10 kA surge protection per line
- Gas tube protection 90 VDC breakdown

	Model #	Lines	Thread Type	Location	Enclosure
D.	**IG1CM**	1 (up to 2)	F	Indoor	—
E.	**IG1C3R**	1 (up to 6 coax)	F	Indoor/Outdoor	Type 3R

Surge Accessories



F.



G.

H.

	Model #	Decription	Lines	For Use In
F.	**IG2T**	Spare telephone/modem/DSL Internet protection module	2	IG2TM, IG1CM, IG2T3R, IG1C3R, IG1300-2T-1C3
G.	**IG1C**	Spare coax cable protection module	1	IG1CM, IG1C3R, IG2TM, IG4TM, IG2T3R
H.	**IGFlush**	Flush Mount Kit	—	IG2TM, IG4TM, IG1CM