

# Surge Protection Portfolio

Protect modern HVAC equipment and expensive electronic components in single-family homes, offices, commercial buildings and more.



# Despite the following statistics, surge protection is one of the most overlooked safeguards....



- An estimated \$250 to \$500 million dollars per year is lost from property damage caused by severe weather, lightning, electrostatic discharge, switching of inductive or capacitive loads and internal/external switching transients.\*
- Approximately 60 to 80% of all transient voltage surges are generated from inside a home or building; Only 35% of transient voltage surges stem from an outside source.\*\*
- Analysts estimate U.S. consumers spend billions annually on “smart” home appliances,

refrigerators with touchscreens, computerized washers, dryers, ranges and HVAC equipment, yet let them operate largely unprotected from surge.

- 84% of homeowners feel power strips provide adequate protection for computers, HD TVs and other electronic components. Only 20% of these same homeowners understand that these strips degrade over time, rendering them inadequate for surge protection.\*\*\*

\* National Lightning Detection Network

\*\* NEMA Surge Protection Institute

\*\*\* Gibbs and Soell Surge Study in 2014



**WANT TO INFORM YOUR CUSTOMERS ABOUT THE IMPORTANCE OF SURGE PROTECTION?**

Scan the QR code for a handy checklist and see if any areas in your customers' residences or facilities are unprotected.

## FAILURE SHOULD NOT BE AN OPTION.

Protect your customers' investments in sophisticated equipment with Intermatic's portfolio of surge protective devices.

Any system in a residence or commercial property that is powered by electricity is vulnerable to fluctuations in power. This means HVAC equipment, electronic components, office equipment and appliances all require protection from voltage spikes.

While severe weather, lightning and fluctuations in utility power, such as grid switching, are often considered the main culprits of a power disturbance, the overwhelming cause is actually a transient voltage surge that stems from within the home or building. Triggers of transient surges can range from the stopping and starting of motors, appliances and electronics, to even the simple flipping of a light switch. Keep electrical devices and equipment operating unaffected from voltage spikes or transient voltage surges with layered surge protection.

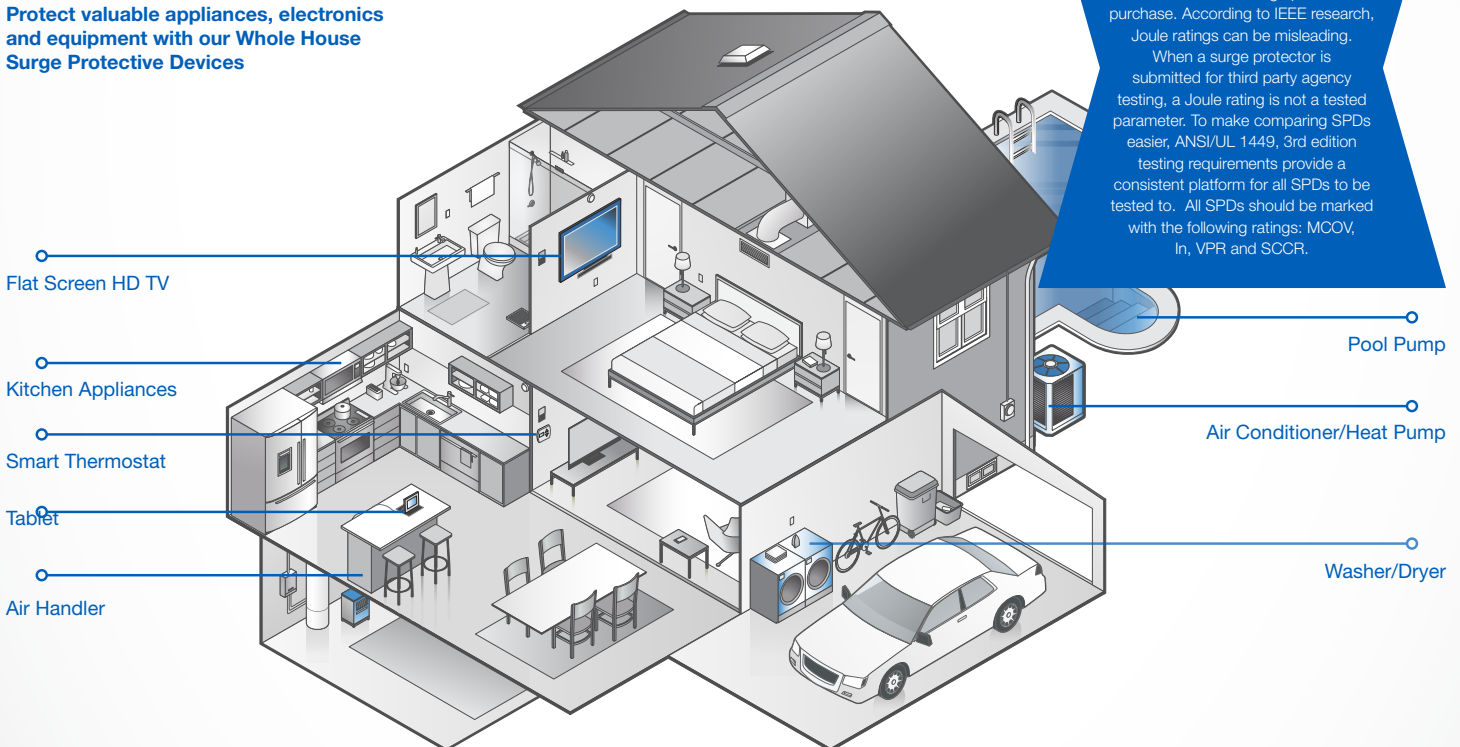
We've been safeguarding electrical equipment for over 20 years. Intermatic's approach is based off of ANSI/UL1449, 3rd Edition standards. First, a Type 1 Surge Protective Device (SPD) is installed at the line side of the main service panel. This protects the entire electrical system of the residence or business. Next, a Type 2 SPD

on the load side of the main service panel enables secondary surge protection from internal, or transient, power surge sources. Then, sensitive electronics and devices are protected from internal surges with point-of-use SPDs.

Our products are designed with trusted, state-of-the-art TPMOV® (Thermally Protected Metal Oxide Varistor) surge protection technology that eliminates the potentially hazardous failure modes associated with standard MOV surge protection technology. They are backed with industry-leading warranties on both the surge protective device and the connected equipment being protected.

This makes our portfolio a great solution for all types of facilities: industrial manufacturing, commercial offices, healthcare facilities, institutional buildings, government buildings and campuses, hospitality, retail spaces and single or multifamily residences.

### Protect valuable appliances, electronics and equipment with our Whole House Surge Protective Devices



#### DID YOU KNOW? Joule ratings can be misleading when it comes to comparing SPDs.

Many end-users look at Joule ratings to determine which surge protector to purchase. According to IEEE research, Joule ratings can be misleading. When a surge protector is submitted for third party agency testing, a Joule rating is not a tested parameter. To make comparing SPDs easier, ANSI/UL 1449, 3rd edition testing requirements provide a consistent platform for all SPDs to be tested to. All SPDs should be marked with the following ratings: MCOV, In, VPR and SCCR.

### The 2020 NEC Surge Protection for Dwelling Units

- The National Electrical Code has always contained requirements that protect buildings and people from the danger risks associated with electrical systems. This new code requirement will protect electrical devices and appliances that may not be protected by point of use SPD's.
- The code enforces usage of SPD's to protect against Transient voltages which can often damage sensitive electronics in life savings devices such as GFCI's and fire detection and notification equipment.
- **NEC 2020 section 230.67:** New and replaced service equipment supplying all dwellings are now required to be protected by listed TYPE 1 or TYPE 2 Surge protective Devices.
- The location of the SPD shall be an integral part of the service equipment or located immediately adjacent to it.

## HVAC

Let our power protection duo safeguard systems from undervoltages, surge and system short cycling.



### DID YOU KNOW? We offer NATE-Certified HVAC Technician training.

NATE-certified technicians are trusted for their knowledge of today's increasingly sophisticated heating and cooling systems. Intermatic makes it easy for HVAC technicians to stay up-to-date on the latest technology by offering classes as needed.

>> Contact your Intermatic sales representative for more information.



### Fast installation. Unmatched protection.

Today's HVAC equipment is more technologically advanced and expensive; yet, it remains susceptible to damage from poor power quality, such as voltage surges and brownouts. Damage from these types of events are typically not covered in a manufacturer's or extended warranty. Our powerful tag team of the Compressor Defender™ and AG3000 fill the out-of-warranty coverage gap by protecting expensive air conditioning system components and furnaces. Covered components include:

- Compressors and circuit boards in residential and light commercial applications
- Central AC and heat pump condensing unit applications
- High-efficiency furnaces, boilers and ductless mini-splits

### The Compressor Defender™ and AG3000 feature:

- Fast, simple, 10-minute or less installation onto disconnects
- Minimize nuisance callbacks to save time and money
- Industry-leading 3-year product warranty and 3-year, \$7,500 connected equipment warranty on the compressor and all electronic parts
- Cost-effective solutions, great upsells for seasonal service promotions
- Meet ANSI/UL Listed 1449, 4th Edition standards
- Together this duo offers complete system surge and brownout protection and peace-of-mind for your customers

### Compressor Defender™ Brownout, Surge and Short Cycle Protection — CD1-024R

Rapid Off/On cycling can be extremely hard on an A/C unit's compressor, causing it to restart against high pressures. This strain can overheat and damage the compressor motor windings. Designed specifically for central air conditioners and heat pumps, the Compressor Defender™ is the only all-in-one undervoltage and surge power protection device on the HVAC market for central A/C and heat pump condensing units and their associated motors, controls and components – both electronic and mechanical. It installs easily inside the condensing unit or externally on the outdoor A/C disconnect.

- Instantaneous 5-line cycle\* undervoltage response time
- Power Disruption Response Time: 3-line cycles\*
- \$7,500 connected equipment warranty
- 24 VAC/VDC, 2 A control thermostat output
- Surge and brownout protection with 3-minute short cycle feature
- Two LED indicators provide real time status
- Undervoltage protection complies with AHRI standard 110-2016 Range B Protective Device
- Type 3 UV-resistant plastic enclosure
- Type 2 Surge Protective Device

### Type 1 or Type 2 HVAC/Whole Home Surge Protective Device — AG3000

The versatile multi-use AG3000 Type 1 and 2 Surge Protective Device is used for many Indoor and Outdoor HVAC applications as well as Whole Home Surge protection. This SPD is optimal for multi-layered use to ensure expensive home appliances are 100% covered.

- Three modes of protection
- \$7,500 connected equipment warranty
- Type 1 or Type 2 Surge Protective Device
- Green LED indicator provides status of protection
- Type 4X watertight and UV-resistant plastic enclosure

\*Typical Response Time

## Residential/Commercial

Rely on the industry's best ratings for whole house surge protection.



Homeowners may already have a surge strip for a new computer or flat screen TV. But what about the thousands of dollars they've invested in the kitchen, laundry, garage door opener, smart thermostats, home automation controls, heating and ventilation equipment and specialty lighting? As the electronics we rely on for home and business become "smarter," the components become more complicated to repair.

Protect a home or business owner's investments with surge protective devices that are backed with both product and connected equipment warranties. Intermatic's Type 1 and 2 SPD's offer the industry's best ratings and state-of-the-art surge protection technology.

### Smart Guard® Surge Protective Device with Replaceable IModule™ — IG2200 Series

Intermatic's Smart Guard whole house surge protector has received multiple awards, including Category Winner of EC&M's prestigious Product of the Year. IModules™ with LED lights enable quick and easy indication when protection has been compromised. No need to hard-wire in a new SPD; replacing an affected IModule™ is as easy as changing a printer cartridge; simply remove the old one and snap in the new!

Smart Guard installs onto the main electrical panel and covers a homeowner's big investment equipment, from appliances and computers, to HVAC equipment and TV's.

- Six modes of protection
- Module Power Switch enables convenient disconnection of power at the SPD (IG2240-IMSK only)
- Includes three IModules® with LED power and protection status lights
- Available in Type 1 metal enclosure or Type 3R plastic or metal enclosure
- 10-year product warranty
- \$25,000 or \$50,000 connected equipment warranty for 10 years on appliances and electronics

### Type 1 and Type 2 Flush Mountable Whole Home Surge Protective Devices — IG1200 Series

The IG Series is designed for both indoor and outdoor installations and is ideal for residential and light commercial applications.

- Three or six modes of surge protection depending on model
- Green LED indicator provides status of protection
- Type 3R rainproof enclosure for indoor or outdoor applications in plastic or metal
- 3, 5 or 10-year product warranties
- \$7,500, \$10,000 or \$25,000 connected equipment warranties on appliances and electronics

## Commercial/Industrial

Minimize financial losses and downtime.



### Single and Three Phase Type 1 and Type 2 Surge Protective Devices – AG Series

Keeping a facility operating smoothly is key to controlling costs. Properly protecting schools, offices, manufacturing, commercial office spaces, healthcare facilities, retail spaces and institutional buildings from electrical surges helps avoid costly emergency repair calls and downtime while ensuring occupant comfort and productive environments. Our 3-phase commercial surge protection is up to the task!

The AG Series is designed for indoor or outdoor applications in single and 3-phase service voltages. Outdoor applications include 3-phase rooftop units, irrigation equipment, farm equipment, pumps, lighting fixtures, traffic signaling devices, HVAC controls and motors.

- Type 1 or Type 2 SPD
- Three or six modes of protection
- Green LED provides status of protection indicator
- Type 4X watertight, plastic enclosure for outdoor installations
- UV-resistant polycarbonate housing

### What do the various product markings on a surge protective device (SPD) really mean, and which are important?

Underwriters Laboratories (UL) requires certain markings be on any UL listed or recognized SPD. Some parameters which are important and should be considered when selecting an SPD include:

- **MCOV** – The Maximum Continuous Operating Voltage, this is the maximum voltage the device can withstand before conduction (clamping) begins. It is typically 15-25% higher than the nominal system voltage.
- **Nominal Discharge Current (In)** – is the peak value of current, through the SPD having a current waveshape of 8/20 where the SPD remains functional after 15 surges. The peak value is selected by the manufacturer from a predefined level UL has set. I(n) levels include 3kA, 5kA, 10kA and 20kA and may also be limited by the Type of SPD under test.
- **VPR** – Voltage Protection Rating. A rating per the latest revision of ANSI/

### Office-Grade Surge Strips

When protecting your equipment is crucial, these surge strips create an important layer of defense from voltage fluctuations for sensitive electronic loads like computers, fax machines, printers and more.








- Available with EMI/RFI Noise Filtration
- Three modes of protection
- LED indicator provides status of protection
- 5-year product warranty
- \$5,000, \$10,000 or \$25,000 connected equipment warranties on appliances and electronics

UL 1449, signifying the “rounded up” average measured limiting voltage of an SPD when the SPD is subjected to the surge produced by a 6 kV, 3 kA 8/20  $\mu$ s combination waveform generator. VPR is a clamping voltage measurement that is rounded up to one of a standardized table of values. The standard VPR ratings include 330, 400, 500, 600, 700, etc. As a standardized rating system, VPR allows the direct comparison between like SPDs (i.e. same Type and Voltage).

- **SCCR** – Short Circuit Current Rating. The suitability of an SPD for use on an AC power circuit that is capable of delivering not more than a declared rms symmetrical current at a declared voltage during a short circuit condition. SCCR is not the same as AIC (Amp Interrupting Capacity). SCCR is the amount of “available” current that the SPD can be subjected to and safely disconnect from the power source under short circuit conditions. The amount of current “interrupted” by the SPD is typically significantly less than the “available” current.

# Surge Selection Guide

							
<b>SPD Ratings</b>	IG2240-IMSK	IG2240-PK	IG2280-OM/IM	IG1200RC3	IG1240RC3	IG3240RC3	IG - Heavy Duty Point-of-Use Strips
<b>SPD Type</b>	1 or 2	2	2	1 or 2	1 or 2	1 or 2	3
<b>Service Voltage</b>	120/240 VAC 50/60 Hz	120/240 VAC 50/60 Hz	120/240 VAC 50/60 Hz	120/240 VAC 50/60 Hz	120/240 VAC 50/60 Hz	120/240 VAC 50/60 Hz	125 VAC
<b>Phase</b>	Single	Single	Single	Single	Single	Single	Single
<b>Modes of Protection</b>	6	6	6	3	6	6	3
<b>Surge Protection Technology</b>	TPMOV®	TPMOV®	TPMOV®	TPMOV®	TPMOV®	TPMOV®	MOV®
<b>Nominal Discharge Current (kA)</b>	10	10	20	20	20	20	—
<b>Short Circuit Current Rating (kA)</b>	10	10	100	100	100	100	—
<b>Maximum Continuous Operating Voltage (V)</b>	L-N, N-G 150 L-L, L-G 300	L-N, L-G 150 L-L, L-G 300	L-N, N-G 150 L-L, L-G 300	L-N, L-G 150 L-L 300	L-N, N-G 150 L-L, L-G 300	L-N, N-G 150 L-L, L-G 300	130V
<b>Voltage Protection Rating (V)</b>	L-L, L-G 1500 L-N 800 N-G 700	L-L 1200 L-G 1500 L-N 800 N-G 700	L-L 1200 L-G 1500 L-N 800 N-G 700	L-L, 1200 L-N, L-G 700	L-L, L-G 1200 L-N, N-G 700	L-L, L-G 1200 L-N, N-G 700	L-N 400, L-G 400, N-G 500, EMI-RFI FILTERING - Some models
<b>Agency Listing</b>	UL Listed	UL Listed	UL Listed	CSA Certified	CSA Certified	CSA Certified	CSA Certified
<b>Product Warranty</b>	10-year	10-year	10-year	3-year	5-year	10-year	5-year
<b>Connected Equipment Warranty</b>	10-year/\$50,000	10-year/\$25,000	10-year/\$25,000	3-year/\$7,500	5-year/\$10,000	10-year/\$25,000	5 year/\$5,000, \$10,000 and \$25,000 (models vary)

								
<b>SPD Ratings</b>	CD1-024R	AG3000	AG2401C3	AG48013	AG2083C3	AG4803C3	AG6503C3/L3	AG2403C3
<b>SPD Type</b>	2	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2
<b>Service Voltage</b>	120/208-240 VAC 60 Hz	120/240 VAC 50/60 Hz	120/240 VAC 50/60 Hz	277/480 VAC 50/60 Hz	120/208 VAC 50/60 Hz	277/480 VAC 50/60 Hz	347/600 VAC 50/60 Hz	120/208/240 VAC High Leg Delta 50/60 Hz
<b>Phase</b>	Single	Single	Single	Single	Three	Three	Three	Three
<b>Modes of Protection</b>	—	3	3	3	6	6	6	6
<b>Surge Protection Technology</b>	TPMOV®	TPMOV®	TPMOV®	TPMOV®	TPMOV®	TPMOV®	TPMOV®	TPMOV®
<b>Nominal Discharge Current (kA)</b>	20	20	20	20	20	20	20	20
<b>Short Circuit Current Rating (kA)</b>	100	100	50	50	50	50	50	50
<b>Maximum Continuous Operating Voltage (V)</b>	L-L 300 L-N/G 150	L-L 300 L-N 150	L-L 300 L-G, L-N 150	L-L 640 L-G, L-N 320	L-L 300 L-G, L-N 150	L-L 640 L-G, L-N 320	L-L 840, L-G, L-N 420	L1/L3-N/G 150 L2-N/G 270, L1-L3 300, L1/L3-L2 420
<b>Undervoltage Response Time</b>	5 Line Cycles*	—	—	—	—	—	—	—
<b>Short Cycle Delay</b>	3 Min	—	—	—	—	—	—	—
<b>Relay Rating</b>	2 A, 24 VAC	—	—	—	—	—	—	—
<b>Voltage Protection Rating (V)</b>	L-L 1200 L-G, L-N 700	L-L 1200 L-G, L-N 700	L-L 1200 L-G, L-N 700	L-L 2000 L-G, L-N 1200	L-L 1200 L-G, L-N 700	L-L 2000 L-G, L-N 1200	L-L 2500 L-G, L-N 1500	L1/L3-N/G 700 L2-N/G 1000, L1-L3 1200, L1/L3-L2 1500
<b>Agency Listing</b>	UL Listed, 4th Edition	UL Listed, 4th Edition	CSA & UL Listed	CSA & UL Listed	CSA & UL Listed	CSA & UL Listed	CSA & UL Listed	CSA
<b>Product Warranty</b>	3-year limited	3-year	1-year	1-year	1-year	1-year	1-year	1-year
<b>Connected Equipment Warranty</b>	3-year/\$7,500	3-year/\$7,500	—	—	—	—	—	—

\*Typical Response Time

Lighting Controls | Surge Protection | Weatherproof | Photocontrols | Timers | Defrost/Refrigeration Controls

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