

120 VOLT AC POWER LINE SURGE SUPPRESSOR

APPLICATIONS

- Hard Wired Equipment AC Power Protection
- Load Side Distribution Systems
- Secondary Protection for Light Industrial AC Power

FEATURES

- Meets IEC 1000-4-5 Industry Requirements
- Meets ANSI/IEEE C62.41 Requirements
- Differential Mode Protection
- Low Clamping Voltage
- Nanosecond Response Time
- Long Life & Maintenance Free
- Each Device 100% Tested
- CSA & NRTL Certified

MAXIMUM RATINGS

- Line Voltage: 130 VAC
- Line Current:
 - 587B051: 5.0A
 - 587B151: 15.0A
 - 587B201: 20.0A
 - 587B301: 30.0A (Line-to-Neutral Only)
- Transient Voltage: 6,000V Peak
- Transient Current: 3,000A Peak
- Leakage Current @ 120 VAC:
 - Line-to-Neutral: 1.0mA
 - Neutral-to-Ground: 0.5mA
- Operating & Storage Temperatures: -40°C to +85°C

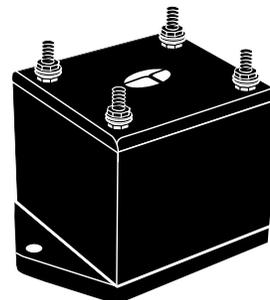
DESCRIPTION

The 587B series of 120 Volt AC surge suppressors is designed for use by the OEM, the equipment installer and/or maintenance contractor. These epoxy encapsulated modules employ a three-stage, patented, solid state technology which was originally developed for aerospace applications. This multistage TVS technology has proven to be the most cost effective and reliable method in protecting sensitive electronic equipment from over voltage transients.

This device, a unique low clamping voltage transient suppressor, is designed to protect AC powered equipment from the 6,000 Volt peak open circuit voltage and 3,000 Amp short circuit current as defined in ANSI/IEEE C62.41, Category B.

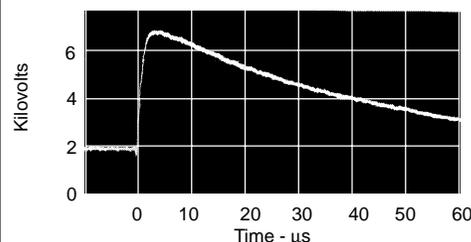
In addition, the 587B series offers a high degree of protection against 120 VAC line noise. It is ideal for protecting 400 Volt rated components because the solid state TVS technology assures that line-to-neutral voltages will not exceed 350 Volts. While the modules are designed for transient voltage protection, the advanced patented circuitry will also attenuate the amplitude and slow the rate of rise of high frequency noise. The 587B Modules include differential mode low-pass filters which are effective in reducing interference from line to equipment and are effective in reducing equipment generated noise to meet FCC, VDE and CSA interference requirements.

IEC 1000-4 COMPATIBLE

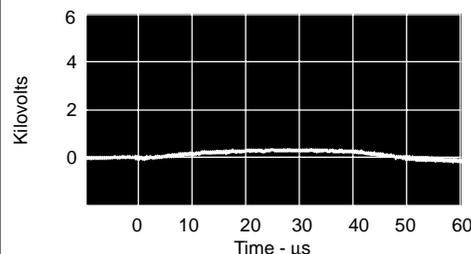


U.S. PATENT 4,563,720

**FIGURE 1
TRANSIENT VOLTAGE THREAT
CONDITION**



**FIGURE 2
TYPICAL CLAMPING ACTION
OF A 15 AMP MODULE**



Figures 1 and 2 are photographs of digitized waveforms showing the typical clamping action of a 15 ampere module. A 12 ohm resistor is used to represent a 10 Amp equipment load. The load is then subjected to the ANSI/IEEE C62.41 Category B test conditions (6,000V/3,000A). These photographs contrast the effect on equipment with and without the protector.

ELECTRICAL CHARACTERISTICS @ 25°C Ambient Temperature

Operating Line Voltage: 130 VAC Max Maximum Line Current: 587B051, 5A 587B151, 15A 587B201, 20A 587B301, 30A	RESPONSE TO TRANSIENT VOLTAGES						
	Clamping		Test Condition				
	PROTECTION MODE	MAXIMUM CLAMPING VOLTAGE	OPEN CIRCUIT VOLTAGE @ 1.2 x 50 μs	OPEN CIRCUIT VOLTAGE @ 8 x 20 μs			
MAXIMUM RATINGS Transient Voltage: 6,000V_{peak} Transient Current: 3,000A_{peak} Storage & Operating Case Temperature (measured at center of mounting surface): -40°C to +85°C	DIFFERENTIAL (Line to Neutral)	295V 350V	1,000V 6,000V	500A 3,000A			
	COMMON (Neutral to Ground)	500V 650V	1,000V 6,000V	500A 3,000A			
Current Leakage at 120 VAC Line to Neutral: 1.0mA Neutral to Ground: 0.5mA	FILTER CHARACTERISTICS (Noise Attenuation)						
	Frequency (MHz)	0.15	0.5	1.0	5.0	10	30
	Common Mode Attenuation (dB)	10	25	35	55	50	40
	Differential Mode Attenuation (dB)	30	55	55	55	50	45

OPERATION

For maximum effectiveness, the protector should be installed directly after the AC line on/off switch and fuse. This will protect the electronics from the AC line switch arcing and the severe transients caused by a fuse clearing.

Some heat is produced when operating at full rated current load, and heat sinking may be required to maintain case temperatures below 85°C. The case temperature is measured at the center of the mounting surface. The unit should not be mounted to a low combusting temperature material such as wood.

High energy transients will cause a large circulating current in the AC input line (2,500A is possible). To prevent electromagnetic coupling, the AC line on the input side of the protector must be dressed away from other wiring and magnetic shielding may be required. In addition, the electrical service must be connected to a low impedance earth ground.

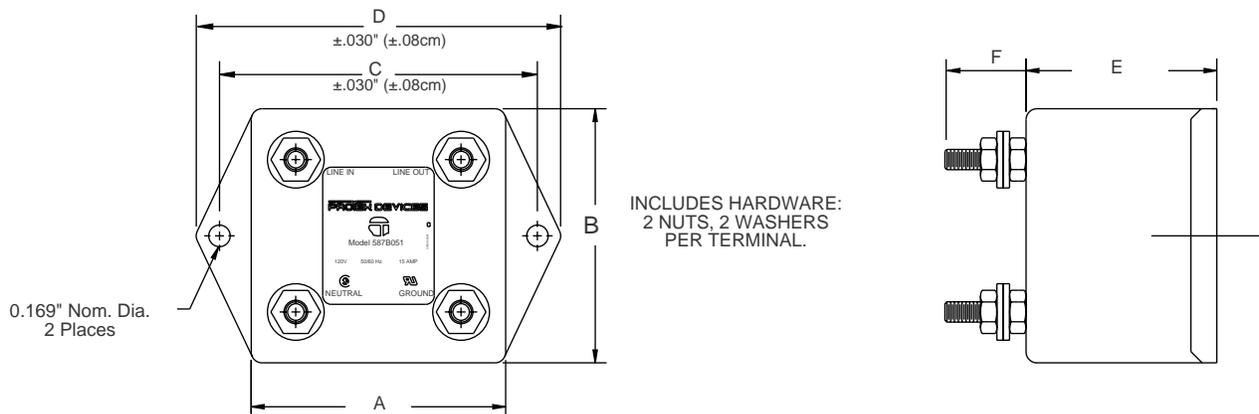
ARRESTER DEFINITIONS

Clamping Voltage: The clamping voltage of an arrester is the voltage that appears across its terminals during conduction of a transient current.

Standard Wave: The waveshape of a surge current or voltage is designated by a combination of two numbers. The first number is for the time of the wave front expressed in microseconds from zero to the peak of the wave. The second number is for the time of the wavetail also expressed in microseconds from zero to the instant that the wavetail reaches one-half of the crest or peak value. Example, 8/20 μs wave.

Transient Current: The transient current of an arrester is the peak surge current which flows through the arrester when voltage clamping occurs.

587B DIMENSIONS & CASE OUTLINE



PROTEK PART NUMBER	MAXIMUM LINE CURRENT	CASE (INCHES)						CASE (CENTIMETERS)						APPROX. WEIGHT IN GRAMS	TERMINAL THREADS
		A	B	C	D	E	F	A	B	C	D	E	F		
587B051	5A	2	2	2.5	3.0	1.5	0.6	5.08	5.08	6.35	7.62	3.82	1.52	250	#8-32
587B151	15A	3	2	3.5	4.0	1.5	0.6	7.62	5.08	8.9	10.2	3.82	1.52	500	#8-32
587B201	20A	3	3	3.5	4.0	1.5	0.6	7.62	7.62	8.9	10.2	3.82	1.52	750	M5
587B301	30A	3	3	3.5	4.0	1.5	0.6	7.62	7.62	8.9	10.2	3.82	1.52	850	M5

