PROTEK DEVICES®
.....Engineered solutions for the transient environment

587B062LP thru 587B302LP

LOW PROFILE 240V 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**
- **Listed to CSA/NRTL, File LR65240-15**
- **Differential & Common Mode Protection**
- **Low Clamping Voltage**
- **Nanosecond Response Time**
- **Long Life & Maintenance Free**
- **Each Device 100% Tested**

MAXIMUM RATINGS

- **Line Voltage: 240 VAC**
- **Line Current: —587B062LP: 6.0A**
  —587B102LP: 10.0A
  —587B162LP: 16.0A
  —587B302LP: 30.0A**
- **Transient Voltage: 6,000V Peak**
- **Transient Current: 3,000A Peak**
- **Leakage Current @ 240 VAC:**
  —Line-to-Neutral: 1.0mA
  —Line-to-Neutral Voltage: 750V
- **Operating & Storage Temperatures: -40°C to +85°C**

****Product not CSA/NRTL Listed**

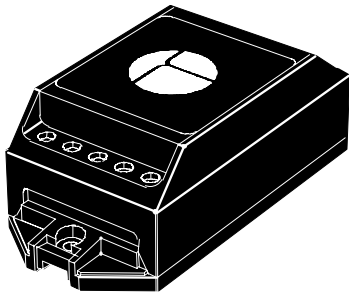
DESCRIPTION

The 587B low profile (LP) series of 240 Volt AC surge suppressors is designed for use by the OEM, the equipment installer and/or maintenance contractor. These 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 low profile series offers a high degree of protection against 240 VAC line noise. It is ideal for protecting 800 Volt rated components because the solid state TVS technology assures that line-to-neutral voltages will not exceed 800 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 587BxxxLP Modules include common mode and 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

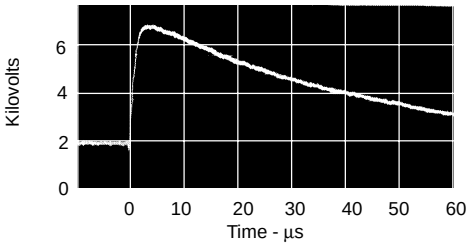
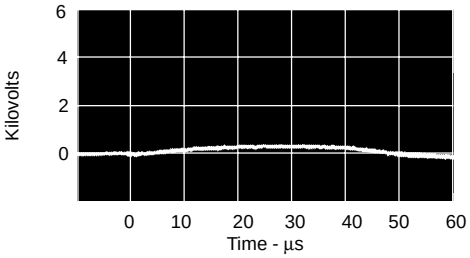


FIGURE 2
TYPICAL CLAMPING ACTION OF A 16 AMP MODULE



Figures 1 and 2 are photographs of digitized waveforms showing the typical clamping action of a 16 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.

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ELECTRICAL CHARACTERISTICS @ 25°C Ambient Temperature

Operating Line Voltage: **240 VAC Max**

Maximum Line Current: **587B062LP, 6A**
587B102LP, 10A
587B162LP, 16A
587B302LP, 30A

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**

Current Leakage at 120 VAC
Line to Neutral: **1.0mA**
Neutral to Ground: **N/A**

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
DIFFERENTIAL (Line to Neutral)	**800V**	**6,000V**	**3,000A**
COMMON (Neutral to Ground)	**1,000V**	**6,000V**	**3,000A**
(Line to Ground)	**1,000V**	**6,000V**	**3,000A**

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 arrestor 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 arrestor is the peak surge current which flows through the arrester when voltage clamping occurs.

587BLP DIMENSIONS & CASE OUTLINE