Bantam Clean Power

Bantam Vanguard
PP3002B Data Sheet

Patented Technology that Protects Line, Neutral and Ground

www.bantamcleanpower.com

Professional Grade

Model PP3002B-Product Specifications

Surge Protection ● Power Conditioning & Filter ● Stable Ground Reference
Harmonic Attenuation ● Power Factor Correction ● Ground Infiltration Protection

Electrical Features

Input Connection:	6' SJTOW 16 AWG cord set, NEMA 5-15P plug
Output Connection:	Two (2) filtered NEMA 5-15R outlets
Circuit Protection:	3 amp thermal breaker, push-to-reset

Electrical Ratings

Input Voltage:	110-120 VAC Single Phase
Output Voltage:	110-120 VAC Single Phase
Max Output Voltage:	150 VAC
Output Current:	3 amps, VA Rating 360
Nominal Frequency:	50 to 60 Hz
Power Factor:	0.90
Safety Standard:	MET Listed to UL and cUL Standards

MET C US

Performance Metrics

Total Surge Protection <1% <1% Surge Residual

Voltage Protection Rating:	330 Volts Line-Neutral, Line-Ground, Neutral-Ground.
Electrical Mode Protection:	Patented in-series Normal (L-N) and Common Mode (L-G, N-G, L,N,G).
Harmonic Attenuation:	40% typical reduction of odd-numbered current harmonics.
Power Factor Correction:	Up to 30% average improvement.
EMI/RFI Noise Attenuation:	Each path (Line, Neutral, Ground) bi-directionally filtered (patented): Up to 100dB reduction on Line and Neutral, up to 60dB on Ground; Frequency Range of 100 Hz to > 1GHz.
Electromagnetic Pulse Reduction:	Blocks all unwanted current from pulses entering Line, Neutral and Ground
Surge Joule Rating:	Series Mode Protection = Unlimited Joules of Energy Suppression
Duty Cycle:	Tested independently to retain performance after 24 hours of constant 6000V, 3000 Amps surges without any degradation to unit or protected device.
Actual Clamping Voltage During Surge (Typical) Under Load:	Line-Neutral Voltage-120V RMS +/-10V. Neutral-Ground Voltage-0V RMS +/-10V.
Surge Line Current:	Less than 0.0001 Amps over RMS.
Surge Withstand Rating:	Severe Performance Test - 6000 Volts, 500 Amps Cat. A C62.41-1991 Ring-wave surge (at 90 degree point of input sine wave, positive charge, L1, L2/PE) injected every 45 seconds with powered loads in place for over 1260 injections in a 24 hour period with no degradation of device or attached load.
Surge Protection Life:	Surge events do not damage patented circuit. Surge protection is always active.

Physical/Environmental

Enclosure:	ABS/PVC 94V0 with wall mounting feature
Storage Temp (ambient):	40° to 80° Fahrenheit, (4° to 27° Celsius)
Operating Temp (ambient):	-40° to 104° Fahrenheit, (-40° to 40° Celsius)
Product Weight:	2.4 lbs, (1100 grams)
Product Dimensions:	Length 6.5 inches; Width 3.5 inches; Height 3.3 inches

Intellectual Property International Patents

6,166,458
6,288,917
8,223,468

Contact: Lodestone/Digilant, 4769 E. Wesley Drive, Anaheim CA 92807 • (714) 970-0900

Performance Comparison

Patented Technology that Protects Line, Neutral and Ground

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Compare Surge Protection

Other Products

MOV's alone or MOV's with traditional inductors block surges and spikes on line and neutral, and dump excess energy to ground, but degrade with each surge and spike event and may not survive a significant event like a lightning strike. Effectiveness grade when new: A to C, Effectiveness grade not-new: C to F. (Needs to be replaced after significant surge event.)
Cost range: $25 to $80.

Bantam

Patented circuit is always energized, anticipating surge and spike energy on line, neutral and ground. Energy is absorbed into magnetic fields, conditioned and recycled as clean energy without dumping to ground. Will absorb and dissipate over 1,000 UL1449 surge events (lightning strikes) with no degradation to Bantam or the protected device, and has a useful life of over 10 years.

Compare Power Conditioning

Other Products

Power conditioning and regulating devices use transformers in combination with other components to ensure that optimum energy and frequency is delivered to sensitive devices. These devices can include additional surge protection and harmonic filtering systems.

Effectiveness grade: B to C. Additional cost range: $60 to $200

Bantam

The same balanced circuit and magnetic field that absorbs and recycles power surges and spikes also conditions power, providing up to 20 dB of bi-directional common and differential mode insertion loss above 100KHz on Line-Neutral-Ground. The protected device experiences cleaner power and reduced harmmoincs, extending product life.
Effectiveness grade: B,

Compare EMI/RFI Filtering

Other Products

A wide range of problematic EMI and RFI noise frequencies can exist in power circuits. Filtering requires frequency specific components and systems to dampen these errant frequencies. Existing products can provide additional solutions depending on the frequencies to be filtered. Effectiveness across a wide range of frequencies: B to D. Additional Cost Range: $60 to $200

Bantam

The patented technology in the Bantam (same circuit as the above examples) is a very effective bi-directional filter of Electromagnetic Interference (EMI/RFI) from 1 MHz to over 20 MHz. Bantam's 20 dB of common noise suppression will improve a protected devices susceptibility threshold and extends the life of the protected device.
Effectiveness grade across a wide range of frequencies: B+.

Compare Stable Ground

Other Products

Protection on the power circuit ground is generally not available since other technology often dumps surges and spikes to the ground. Other versions protect ground by automatically cutting off power to line, neutral and ground until the threat is gone (requiring a battery back-up system). An alternative is to install expensive isolated ground circuit conduit that connects a computing device back to (hopefully clean) earth ground. Effectiveness grade: D.
Additional Cost $50-$75 (Isolated Ground, $300-$800, Effectiveness B+)

Bantam

Computing devices use the power circuit ground as a reference for 1's and 0's in digital code. Surges, spikes, errant frequencies, noise, EMI/RFI and harmonics on the ground can make a 0 look like a 1 and corrupt code. Bantam's technology (same circuit in the above examples) protects and filters the power circuit ground, along with the line and neutral. Digital code has a stable reference, power is not cut, and no isolated ground is needed. Effectiveness grade: A.

Compare Ground Intrusion

Other Products

Intrusion and infiltration through the power ground is a recent concern described in the Cyber Protection literature under Tempest, Power Line Exploit, and Red Power. Non-Leveler technology power surge and conditioning devices do not protect against ground intrusion.
Effectiveness grade: F. Cost: $0

Bantam

The patented technology in the Bantam (same circuit in the above examples) effectively filters line, neutral and ground, and eliminates bi-directional computer operation "reflection frequencies" from the ground signals exiting a device.
Effectiveness grade: A.

Compare Power Factor

Other Products

Non-Bantam technology Power Factor Correction requires a combination of capacitors and inductors to correct inefficiencies that waste power and increase component stress and heat. This capability is usually an add-on to products described above. Effectiveness grade range A to C.
Additional Cost: $60 to $100.

Bantam

The patented technology in the Bantam (same circuit in the above examples) is an inductive device and will improve capacitive power factor efficiencies by up to 30% when the initial pf is below 70 . The Bantam will not improve inductive power factor inefficiencies.
Capacitive Power Factor Correction Effectiveness grade: B+.

Compare Total Costs

Min $255 to $655
(Not Including $300-$800 Isolated Ground)

MSRP $114.50
One Patented Circuit, Multiple Capabilities

Revolutionary Performance • One Technology • One Product • One Low Price

Surge Protection • Power Conditioning & Filter • Stable Ground Reference
Harmonic Attenuation • Power Factor Correction • Hacker Protection

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