

USER MANUAL

MODEL 509/25 & 509/6 RS-232/422 Surge Protectors



PATTON
Electronics Co.



An ISO-9001
Certified Company

Part #07M509-C
Doc. #074321U,
Rev. D
Revised 1/22/08

SALES OFFICE
(301) 975-1000
TECHNICAL SUPPORT
(301) 975-1007
<http://www.patton.com>

1.0 WARRANTY INFORMATION

Patton Electronics warrants all Model 509 components to be free from defects, and will—at our option—repair or replace the product should it fail within one year from the first date of shipment. This warranty is limited to defects in workmanship or materials, and does not cover customer damage, abuse or unauthorized modification. If this product fails or does not perform as warranted, your sole recourse shall be repair or replacement as described above. Under no condition shall **Patton Electronics** be liable for any damages incurred by the use of this product. These damages include, but are not limited to, the following: lost profits, lost savings and incidental or consequential damages arising from the use of or inability to use this product. **Patton Electronics** specifically disclaims all other warranties, expressed or implied, and the installation or use of this product shall be deemed an acceptance of these terms by the user.

1.1 RADIO AND TV INTERFERENCE

The Model 509 Series units generate and use radio frequency energy, and if not installed and used properly—that is, in strict accordance with the manufacturer's instructions—may cause interference to radio and television reception. They have been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection from such interference in a commercial installation. However, there is no guarantee that interference will not occur in a particular installation. If these products do cause interference to radio or television reception, which can be determined by turning off the unit, the user is encouraged to try to correct the interference by one or more of the following measures: moving the computing equipment away from the receiver, re-orienting the receiving antenna and/or plugging the receiving equipment into a different AC outlet (such that the computing equipment and receiver are on different branches).

1.2 CE NOTICE

The CE symbol on your Patton Electronics equipment indicates that it is in compliance with the Electromagnetic Compatibility (EMC) directive and the Low Voltage Directive (LVD) of the Union European (EU). A Certificate of Compliance is available by contacting Technical Support.

1.3 SERVICE

All warranty and nonwarranty repairs must be returned freight prepaid and insured to Patton Electronics. All returns must have a Return Materials Authorization number on the outside of the shipping container. This number may be obtained from Patton Electronics Technical Support: **(301) 975-1007**; **<http://www.patton.com>**; or, **support@patton.com**.

NOTE: Packages received without an RMA number will not be accepted.

Patton Electronics' technical staff is also available to answer any questions that might arise concerning the installation or use of your Patton Model 509. Technical Service hours: **8AM to 5PM EST, Monday through Friday.**

2.0 GENERAL INFORMATION

Thank you for your purchase of this Patton Electronics product. This product has been thoroughly inspected and tested and is warranted for One Year parts and labor. If any questions or problems arise during installation or use of this product, please do not hesitate to contact Patton Electronics Customer Service at (301) 975-1007.

2.1 DESCRIPTION

Transient overvoltages can be coupled to data lines from various sources: lightning, AC power lines, elevator motors, factory equipment, even UPS devices. Data lines running near power, control or telephone cables are subject to short duration pulses approaching several thousand volts. Patton Electronics surge protectors use the latest in transient surge suppression technology to guard against potential data loss and hardware damage due to transient surges. The Model 509 protects all 9 pins of the RS-232 or RS-422 interface. Surges are shunted directly to chassis ground via the metal D-shell connector

Warning: These products will not provide complete protection should your equipment be subject to a direct lightning hit.

2.2 SURGE PROTECTION BENEFITS

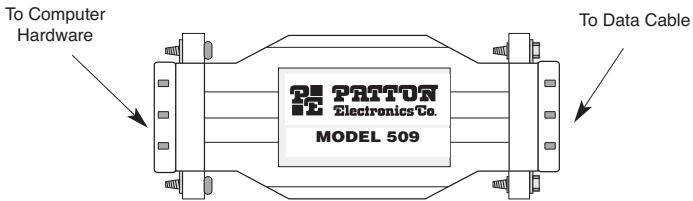
The method of surge protection used in the Model 509 yields four important benefits to your system:

- 1) **High Surge Capability.** The 509 can dissipate up to 1500 watts (10 x 1000 μ Sec) in compliance to IEC 801-5 Level 3 (2kV);
- 2) **Quick Response.** The 509 has a fast response time of 1.0 picosecond at the component level and less than 0.5 microsecond installed;
- 3) **Low Insertion Loss.** Connect the 509 directly to RS-232 ports with minimal loss to your system: about the same as a gender changer;
- 4) **"Fail Open Design".** Unlike some other surge suppressors, the 509 fails "open" if system experiences a direct lightning strike or other extreme transient above the rating of the protector. This means that if the surge suppressor fails, data and surges are both shunted to ground instead of back into your equipment.

3.0 INSTALLATION

Patton's Model 509 units are easy to install and should give you years of trouble-free service. Here are a few simple instructions to help you get things hooked up right:

1. Check the label of the Model 509 to be sure that you have the correct clamping voltage for your system. The Model 509/25 is for RS-232 systems. The Model 509/6 is for RS-422 systems.
2. Unplug (disconnect) the existing connection between the coaxial cable and the equipment's I/O port.
3. Install the Model 509 between the incoming coax and the protected equipment (see below). Place the surge protector as close as possible to the device being protected.
4. Connect the braided ground strap directly to a frame ground connection on the protected device. If you are unsure where to locate a frame ground connection on your equipment, consult the equipment's user manual or contact the manufacturer—the ground connection is critical for proper operation of the Model 509.



Note: This unit is bi-directional

Figure 1. How to Connect the Patton Model DB-9 to Your Computer Hardware

APPENDIX A

PATTON MODEL 509 SPECIFICATIONS

Circuit:	Bipolar, solid state, bi-directional protection on DB-9 connectors
Electrical Interface:	Model 509/25: RS-232 Model 509/25: RS-422
Response Time:	Less than 0.5 μ Sec.
Input Capacitance:	Model 509/25: less than 500pF Model 509/6: less than 150pF
Clamp Voltage:	35 volts at 100A (8/20 μ Waveform)
Surge Capability:	Model 509/25: IEC-801-5, Level 3, 2kV Model 509/6: IEC-801-5, Level 2, 1kV
Energy Handling:	Model 509/25: 1500 Watts per wire Model 509/6: 600 Watts per wire
Group Delay:	None, 1 MHz to 100 MHz
Series Resistance:	Less than 0.9 Ω
Grounding:	External connection provides separate unit-ground to chassis-ground contact
Cable Length Burden:	Model 509/25: less than 9.1' (2.8m) Model 509/6: less than 2.7' (0.8m)
Size:	2.0" long x 1.0" diameter

Dear Valued Customer,

Thank you for purchasing Patton Electronics products! We do appreciate your business. I trust that you find this user manual helpful.

We manufacture one of the widest selections of data communications products in the world including CSU/DSU's, network termination units, powered and self-powered short range modems, fiber optic modems, interface converters, baluns, electronic data switches, data-line surge protectors, multiplexers, transceivers, hubs, print servers and much more. We produce these products at our Gaithersburg, MD, USA, facility, and can custom manufacture products for your unique needs.

We would like to hear from you. Please contact us in any of the following ways to tell us how you like this product and how we can meet your product needs today and in the future.

Web:	http://www.patton.com
Sales E-mail:	sales@patton.com
Support E-mail:	support@patton.com
Phone - Sales	(301) 975-1000
Phone - Support	(301) 975-1007
Fax:	(301) 869-9293
Mail:	Patton Electronics Company 7622 Rickenbacker Drive Gaithersburg, MD 20879 USA

We are committed to a quality product at a quality price. Patton Electronics is ISO 9001 certified. We meet and exceed the highest standards in the industry (CE, UL, etc.).

It is our business to serve you. If you are not satisfied with any aspect of this product or the service provided from Patton Electronics or its distributors, please let us know.

Thank you.

Burton A. Patton
Vice President

P.S. Please tell us where you purchased this product:
