



*Model: HESP4DR*  
DIN Rail Data Line Surge Suppressor CE

### Introduction

The Model HESP4DR is designed to help protect against lightning strikes, power surges, and other types of voltage disturbances to components on a DIN rail. Five RS-422/485 signals on terminal blocks are supported with a clamping voltage of approximately 6.8 volts. The HESP4DR offers three stages of protection starting with a gas discharge tube followed by a series resistor and finally a Transient Voltage Suppressor (TVS).

In order for a surge protector to work properly it is important to have a good connection to earth ground. The HESP4DR has a #10 grounding screw, which provides a solid ground connection for the user. This design has been tested to two specifications at 6 kilovolts, IEC 1000-4-5: 1995 "Surge Immunity Test" and IEEE C62.41-1991 "IEEE Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits".

To ensure the best protection of your equipment some simple connection guidelines should be followed:

### Connections

1. The HESP4DR should be located as close as possible to the equipment being protected.
2. A good ground connection must be made between the HESP4DR and earth ground. This can be done with the #10 grounding screw.
3. The earth ground connection should be kept as short as possible for best performance. As a recommendation a minimum of 10 gauge copper wire of no more than 3 feet should be used. If it is not possible to achieve the short distance a braided cable made specifically for grounding purposes should be used.
4. The chassis ground of the equipment should be connected to the building's 3-prong plug ground.

### Specifications

|                                 |   |
|---------------------------------|---|
| •Clamping Voltage, stage one:   | Min. 72 VDC, Max.108 VDC                                  |
| •Series Resistance, stage two:  | 2.7 Ohms  |
| •Clamping Voltage, stage three: | Min. 6.45V, Max. 7.14 V                                   |
| •Clamping Time:                 | Less than $5 \times 10^{-9}$ seconds                      |
| •Connectors:                    | Two 6-position terminal blocks                            |
| •Temperature:                   | -40 to +80°C (-40 to +176°F)                              |
| •Humidity:                      | 0-95% non-condensing                                      |
| •Dimensions:                    | Approximately 35.5 x 78.8 x 105.3 mm (1.4 x 3.1 x 4.2 in) |
| •Weight:                        | Approximately .22 kg (.5 oz)                              |

#### DECLARATION OF CONFORMITY

|                                   |   |
|-----------------------------------|---|
| Manufacturer's Name:              | B&B Electronics Manufacturing Company   |
| Manufacturer's Address:           | P.O. Box 1040<br>707 Dayton Road<br>Ottawa, IL 61350 USA  |
| Model Numbers:                    | HESP4DR   |
| Description:                      | DIN Rail Surge Suppressor   |
| Type:                             | Light industrial ITE equipment  |
| Application of Council Directive: | 89/336/EEC  |
| Standards:                        | EN 50082-1 (IEC 801-2, IEC 801-3, IEC 801-4)<br>EN 61000 (-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11)<br>ENV 50204 |

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