

# Electronic Track Signal Protector



The nVent ERICO Electronic Track Signal Protector series provides transient protection from surges induced or conducted onto low-voltage signal circuits for trackside signaling equipment. The series of surge-protection devices is ideal for protecting DC-responsive track relays, train-detection systems, microprocessor-based train-control and indication circuits, train inspection systems, communications systems, highway crossing controls and other operationally sensitive systems.

nVent ERICO Electronic Track Signal Protector devices help ensure that surges do not pose a safety threat in the event of component failure. Indicators on the device help safeguard the device against shorts and provide status indication at a glance. The device cover is marked with the operating voltage and part number, which allows easy identification as to proper application.

## FEATURES

Includes hybrid technology comprised of gap-type voltage switching and varistor-type voltage clamping components

Designed with a fail-safe, isolated from ground failure modes as required for critical signal circuits

Protects sensitive electronic equipment in exposed locations

Epoxy coating helps ensure stability of operation under adverse conditions and in locations of high humidity

Exceeds the AREMA® specifications for both arrestor and equalizer applications

Provides a 50 kA 8/20 maximum surge rating for protection that is suitable for exposed trackside equipment

## SPECIFICATIONS

| Catalog Number                         | ETSP33050         | ETSP330170         |
|----------------------------------------|-------------------|--------------------|
| Nominal System Voltage (Un)            | 50 VDC<br>35 VAC  | 170 VDC<br>120 VAC |
| Max Continuous Operating Voltage (Uc)  | 90 VDC<br>65 VAC  | 220 VDC<br>150 VAC |
| Voltage Protection Level (Up)          | 300 V @ 3 kA      | 550 V @ 3 kA       |
| Nominal Discharge Current (In), L+L-PE |                   | 20kA 8/20 $\mu$ s  |
| Max Discharge Current (Imax), L+L-PE   | 50kA 8/20 $\mu$ s | 50kA 8/20 $\mu$ s  |
| Leakage Current @ Un                   | 1 nA Max          | 1 nA Max           |

| Catalog Number     | ETSP33050                                                                                        | ETSP330170                                                                                       |
|--------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Frequency          | 5 MHz Max                                                                                        | 5 MHz Max                                                                                        |
| Protection Modes   | Two Mode, L1-PE and L2-PE                                                                        | Two Mode, L1-PE and L2-PE                                                                        |
| Technology         | Metal Oxide Varistor (MOV)<br>Gas Discharge Tube (GDT)                                           | Metal Oxide Varistor (MOV)<br>Gas Discharge Tube (GDT)                                           |
| Connection Type    | AREMA® Stud-Type Terminals – 2 Post<br>Terminal Block                                            | AREMA® Stud-Type Terminals – 2 Post<br>Terminal Block                                            |
| Status Indication  | Dual spring thermal disconnect                                                                   | Dual spring thermal disconnect                                                                   |
| Enclosure Material | UL® 94V-0 Thermoplastic                                                                          | UL® 94V-0 Thermoplastic                                                                          |
| Enclosure Rating   | IP 20<br>NEMA®-1                                                                                 | IP 20<br>NEMA®-1                                                                                 |
| Humidity           | 0 - 90                                                                                           | 0 - 90                                                                                           |
| Temperature        | -40 to 80 °C                                                                                     | -40 to 80 °C                                                                                     |
| Depth (D)          | 25mm                                                                                             | 25mm                                                                                             |
| Height (H)         | 75 mm                                                                                            | 75 mm                                                                                            |
| Width (W)          | 55 mm                                                                                            | 55 mm                                                                                            |
| Unit Weight        | 0.1 kg                                                                                           | 0.1 kg                                                                                           |
| Complies With      | ANSI®/IEEE® C62.41.2-2002 Cat A, Cat<br>B, Cat C<br>IEC® 61643-1 Class II<br>AREMA® requirements | ANSI®/IEEE® C62.41.2-2002 Cat A, Cat<br>B, Cat C<br>IEC® 61643-1 Class II<br>AREMA® requirements |
| Color              | Transparent                                                                                      | Yellow                                                                                           |

## ADDITIONAL PRODUCT DETAILS

Frequency @ 3 dB / 120 Ω.

## DIAGRAMS



## WARNING

nVent products shall be installed and used only as indicated in nVent's product instruction sheets and training materials. Instruction sheets are available at [www.nvent.com](http://www.nvent.com) and from your nVent customer service representative. Improper

installation, misuse, misapplication or other failure to completely follow nVent's instructions and warnings may cause product malfunction, property damage, serious bodily injury and death and/or void your warranty.

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