



## BENEFITS

- Maximizes SPD unit performance
- Allows the SPD unit to be installed outside of the switchgear
- Interconnect cable length can be increased up to 4 times
- Increases installation location options
- Simplifies installation and reduces installation time
- Improves installation quality
- Removes hazards of internal SPD installations
- Offered either pre-terminated at the SPD end or unterminated at both ends

## HIGH-PERFORMANCE INTERCONNECT SYSTEM

Installing SPD (Surge Protection Device) units using standard off-the-shelf cable can increase the clamping voltage unless the cable length is kept short.

Current Technology High Performance Interconnect HPI™-SPD Connection System provides the lowest possible impedance connection improving SPD performance.

The HPI™-SPD Connection System has 25% of the typical impedance of the regular cable and allows the installer to increase the interconnection cable length by up to 4 times, while maintaining the clamping voltages to acceptable clamping voltage levels, ensuring maximum SPD unit performance. Using the HPI™-SPD Connection System adds more location flexibility within the electrical room and significantly reduces the installation time.

## WHAT IS THE HPI™-SPD CONNECTION SYSTEM?

The HPI™-SPD Connection System is a dual shielded, triple insulated multi-core power conductor specially constructed to minimize interconnection impedance for SPD installations.

The HPI™-SPD Connection System is UL approved for use with Current Technology SPD Products only.

The ground & neutral shielded design of the HPI™-SPD Connection Systems can be provided to the installer with a pre-manufactured SPD termination, significantly reducing the total time to install the SPD protection unit.

## REDUCED HAZARD SERVICING

By using the HPI™-SPD Connection System to install the SPD protection unit externally to the switchgear, maintenance is simplified. External SPD units feed from a suitable circuit breaker or fuse, provide for a reduced hazard service environment with lower arc flash potential and eliminate the need for hazardous environment personal protection.

## SYSTEM FEATURES

When installing a SPD unit, careful consideration must be given to the location and connection system to the electrical system. Elements to consider include, minimizing the clamping voltage, isolation of contaminants, ease of maintenance and minimization of facility downtime.

Reducing the impedance of the connection between the electrical source and the SPD unit will ensure that the clamping voltage is kept as low as possible. Ideally “zero” impedance is obtained by direct connecting the SPD unit to the electrical system bus assembly. Unfortunately this practice can present significant future hazards including switchgear contamination and extremely difficult maintenance requiring electrical supply shut down and/or building downtime.

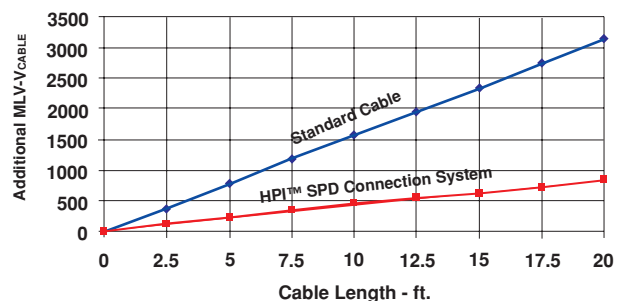
SPD units are designed to divert the transient surge energy, which is generated by lightning and other switching activities. In extreme circumstances, the SPD may become self sacrificing to prevent damage to other critical equipment downstream within the facility. When this occurs, other electrical components installed within the same switchboard can be contaminated as a result. To prevent contamination potential, Current Technology recommends the SPD be installed externally to the switchgear using a low impedance connection system.

## SPD MLV FORMULA

$$V_{TOTAL} = V_{SPD} + V_{CABLE}$$

- **V<sub>TOTAL</sub>** is the total voltage experienced by protected equipment.
- **V<sub>SPD</sub>** is the measured limited voltage (ie. clamp voltage) of SPD.
- **V<sub>CABLE</sub>** is the additional voltage added to the **V<sub>SPD</sub>** due to cable impedance.

HPI Performance vs. Standard Cable



Test Waveform: ANSI/IEEE C62.41 B3/C1 combination waveform (6kV/3kA, 8/20µs)

## SPECIFICATIONS

|                                   | 6 AWG                      | 10 AWG                      |
|-----------------------------------|----------------------------|-----------------------------|
| <b>Insulation</b>                 | PVC/PVC/PVC                | PVC/PVC/PVC                 |
| <b>Line Conductors</b>            | 6 AWG/Stranded, UL1015/TEW | 10 AWG/Stranded, UL1015/TEW |
| <b>Neutral Shield</b>             | Tinned Copper Braid        | Tinned Copper Braid         |
| <b>Ground Shield</b>              | Tinned Copper Braid        | Tinned Copper Braid         |
| <b>Diameter</b>                   | 1.2" ± 0.02"               | 0.75" ± 0.02"               |
| <b>Nominal Impedance (@10kHz)</b> |                            |                             |
| Line                              | 0.009 ohms/ft              | 0.009 ohms/ft               |
| Neutral                           | 0.004 ohms/ft              | 0.004 ohms/ft               |
| Ground                            | 0.004 ohms/ft              | 0.004 ohms/ft               |
| <b>Nominal Capacitance</b>        |                            |                             |
| Line – Line                       | 35.6 pf/ft                 | 35.6 pf/ft                  |
| Neutral – Neutral                 | 52.6 pf/ft                 | 52.6 pf/ft                  |
| Neutral – Ground                  | 57.1 pf/ft                 | 57.1 pf/ft                  |
| <b>Nominal Inductance</b>         |                            |                             |
| Line                              | 0.098 µH/ft                | 0.098 µH/ft                 |
| Neutral                           | 0.041 µH/ft                | 0.041 µH/ft                 |
| Ground                            | 0.021 µH/ft                | 0.021 µH/ft                 |



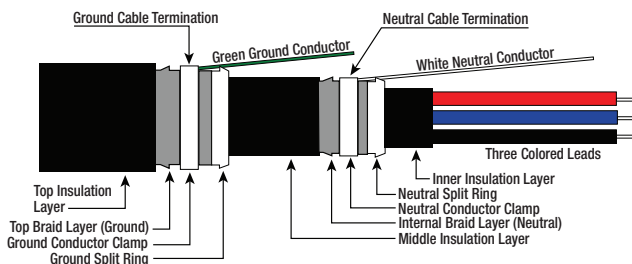
## ORDERING INFORMATION

| Wire Gauge | Voltage (VAC) | Hz       | Temperature Rating | Cable OD      | Bending Radius (Min) | Nominal Length* | Factory Terminated WYE Config. Part No. | Unterminated WYE Config. Part No. | Factory Terminated Delta Config. Part No. | Unterminated Delta Config. Part No. |
|------------|---------------|----------|--------------------|---------------|----------------------|-----------------|---|-----------------------------------|---|-------------------------------------|
| 6 AWG      | 600V Max      | 0-400 Hz | 105°C              | 1.2" ± 0.02"  | 3"                   | 5               | HPI-6Y-05                               |                                   | HPI-6D-05                                 |                                     |
|            |               |          |                    |               |                      | 10              | HPI-6Y-10                               | HPI-6Y-10U                        | HPI-6D-10                                 | HPI-6D-10U                          |
|            |               |          |                    |               |                      | 15              | HPI-6Y-15                               |                                   | HPI-6D-15                                 |                                     |
|            |               |          |                    |               |                      | 20              | HPI-6Y-20                               |                                   | HPI-6D-20                                 |                                     |
|            |               |          |                    |               |                      | 25              | HPI-6Y-25                               | HPI-6Y-25U                        | HPI-6D-25                                 | HPI-6D-25U                          |
|            |               |          |                    |               |                      | 30              | HPI-6Y-30                               |                                   | HPI-6D-30                                 |                                     |
|            |               |          |                    |               |                      | 50              | HPI-6Y-50                               | HPI-6Y-50U                        | HPI-6D-50                                 | HPI-6D-50U                          |
| 10 AWG     | 600V Max      | 0-400 Hz | 105°C              | 0.75" ± 0.02" | 2"                   | 5               | HPI-10Y-05                              |                                   | HPI-10D-05                                |                                     |
|            |               |          |                    |               |                      | 10              | HPI-10Y-10                              | HPI-10Y-10U                       | HPI-10D-10                                | HPI-10D-10U                         |
|            |               |          |                    |               |                      | 15              | HPI-10Y-15                              |                                   | HPI-10D-15                                |                                     |
|            |               |          |                    |               |                      | 20              | HPI-10Y-20                              |                                   | HPI-10D-20                                |                                     |
|            |               |          |                    |               |                      | 25              | HPI-10Y-25                              | HPI-10Y-25U                       | HPI-10D-25                                | HPI-10D-25U                         |
|            |               |          |                    |               |                      | 30              | HPI-10Y-30                              |                                   | HPI-10D-30                                |                                     |
|            |               |          |                    |               |                      | 50              | HPI-10Y-50                              | HPI-10Y-50U                       | HPI-10D-50                                | HPI-10D-50U                         |
|            |               |          |                    |               |                      | 100             | HPI-10Y-100                             | HPI-10Y-100U                      | HPI-10D-100                               | HPI-10D-100U                        |

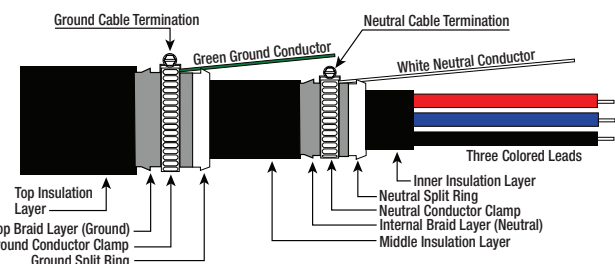
\*Lengths quoted are external to the SPD unit. Standard cables include a factory terminated end for the SPD connection and a field termination kit for line side termination. Unterminated cables would require a field termination kit for both ends.

## HPI™ – SPD Connection System (WYE Configuration Shown)

### Factory Terminated Cable



### Field Terminated Cable (Using unterminated cable)



### Field Termination Kit

| Description | Part No.     | Description  | Part No.     |
|-------------|--------------|--------------|--------------|
| 6 AWG Wye   | 350-0221-001 | 10 AWG Wye   | 350-0220-001 |
| 6 AWG Delta | 350-0221-002 | 10 AWG Delta | 350-0220-002 |

Please note two field termination kits need to be ordered to make one complete cable.



Thomas & Betts Power Solutions

5900 Eastport Blvd. • Richmond, VA 23231-4453 USA

Tel: (804) 236-3300 • Toll free: (800) 238-5000 • Fax: (804) 236-4841

[tnbpowersolutions.com/current\\_technology](http://tnbpowersolutions.com/current_technology)

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