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FIELD INSTALLATION MANUAL

# HPI™ #6 AWG cable

Surge protective device connection system



## Field termination kit

**Stop! Read this first.**

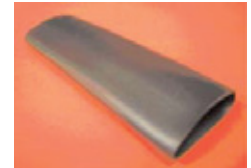
### NOTICE

**Important!**

Upon receiving the HPI cable, review the field termination instructions to ensure proper field installation. Examine the contents of the field termination kit to ensure that all parts have been received.

**This field termination kit includes:**

<b>Ground banding split ring — (part A)</b> P/N 110-0039-001, shell size 16 (1" ID)	Qty. 1
<b>Neutral banding split ring — (part B)</b> P/N 110-0038-001, shell size 14 (0.88" ID)	Qty. 1
<b>Conductor clamp — (part C)</b> P/N 110-0042-001, size $\frac{3}{16}$ " to $\frac{1}{4}$ " diameter	Qty. 2
<b>Shrink tubing — (parts D and E)</b> P/N 128-0160-002, size 1.5" diameter x 2.5" length	Qty. 1
P/N 128-0160-002, size 1.5" diameter x 6" length	Qty. 1
<b>Ground conductor (color green) — (part F)</b> P/N 224-0017-002, 2.5 ft.	Qty. 1
<b>Neutral conductor (color white) — (part G)</b> P/N 224-0017-001, 2.5 ft.	Qty. 1
<b>Field installation manual — (part H)</b> P/N 750-0095-002 B00 (this document)	Qty. 1

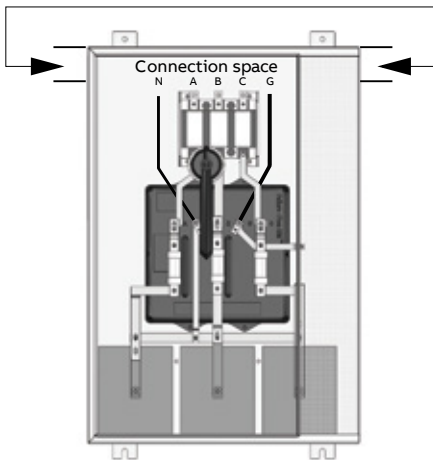


## Cable routing

### Cable routing

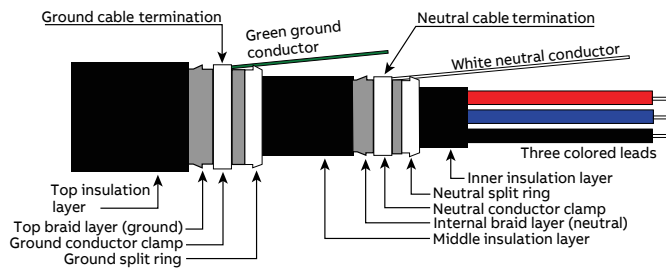


Recommended cable entry

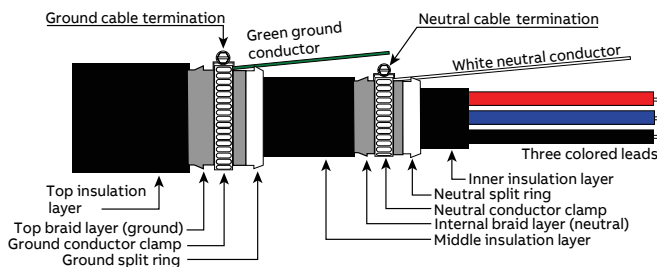


Top-feed SL3 unit with disconnect shown

### HPI™ — SPD connection system (wye configuration shown)



Factory-terminated cable



Field-terminated (using unterminated cable)

### CAUTION

SPD's performance will be reduced if the conductors are (a) too long, (b) have too many bends or (c) have sharp bends. ABB recommends the cable to enter from upper left or right side of the enclosure (see diagram). However, any safe entry locations meeting the requirements of the National Electric Codes are acceptable. The selected entry location should ensure short conductor runs providing a direct route with a minimum of bends. If bends are required, they should be sweeping bends. Do not make sharp 90° bends for aesthetic purposes.

With its ground and neutral shield design, the HPI SPD connection system can be installed with or without the use of steel or PVC conduit. If the cable is to be installed without conduit, ABB requires that strain reliefs and/or grommets be used for the holes in the connected equipment, as well as the ABB SPD. To maintain the NEMA-4 rating of the ABB SPD, water-tight fittings should be used.

### WARNING

**Hazardous voltages present:** Improper installation or misapplication may result in serious personal injury and/or damage to electrical system. Read the complete installation instructions before proceeding with installation. Remove all power to the electrical panel before installing the HPI™ SPD connection system.

### SAFETY INSTRUCTIONS

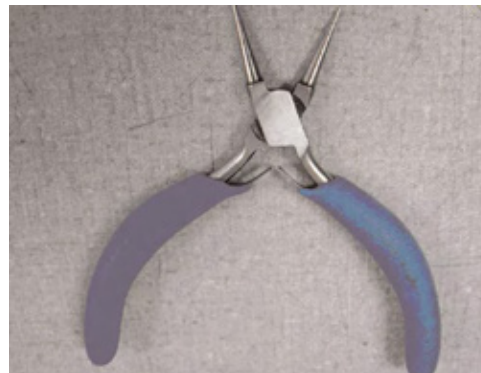
**Important safety instructions:** All work must be performed by licensed and qualified personnel. The electrical system must be properly grounded in accordance with the U.S. National Electrical Code, state and local codes or other applicable codes for the HPI SPD connection system to function properly. This device is suitable for installations rated at 600 V AC or less.

## Wye configuration termination instructions

- 1.**
  - Determine required length to make the connections inside the panel and add 5".
  - Cut into the top insulation layer.
  - Care should be taken not to damage the top braid layer.
  - Cut around the outer layer and remove it from the end of the cable.
- 2.**
  - Cut into the top braid layer approximately 1" and remove the excess top braid layer.
- 3.**
  - Take the ground banding split ring (part A) and work it underneath the top braid layer.
  - The braid layer should cover as much of the split ring as possible.
  - It may be beneficial to use a tool as shown to open the braid layer, making it easier to insert the split ring.



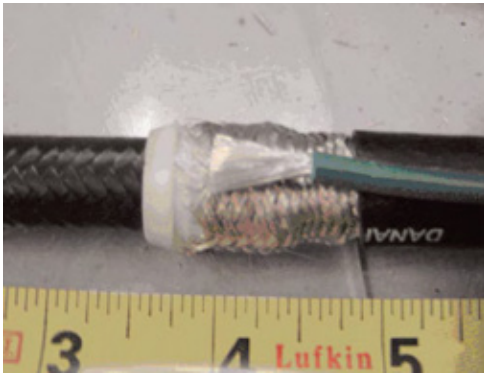
- 2.**
  - Cut into the top braid layer approximately 1" and remove the excess top braid layer.



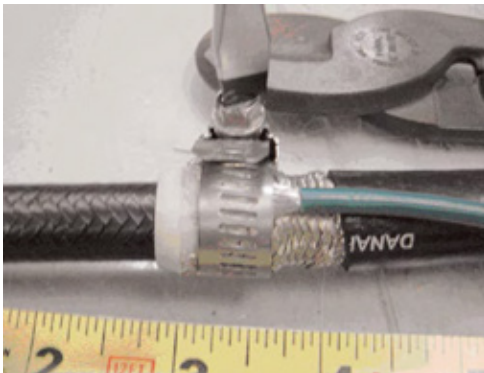
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## Wye configuration termination instructions

- 4.**
- Strip the green ground conductor (part F) approximately 1".
  - Spread the leads out.
  - Place it on the top braid layer as shown.
  - Preform wire as shown.
- 6.**
- Moving down the cable a minimum of 1.5", cut and remove the next layer of insulation.
  - Care should be taken not to damage the braiding underneath.



- 5.**
- Using a conductor clamp (part C), secure the green ground conductor to top braid layer.
  - Make sure the clamp is centered on the split ground banding ring, and tighten with a screwdriver.



- 7.**
- Leave approximately 1" of the internal layer of braid and remove the excess.
  - Slide the neutral banding split ring (part B) underneath the remaining braid layer.



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## Wye configuration termination instructions

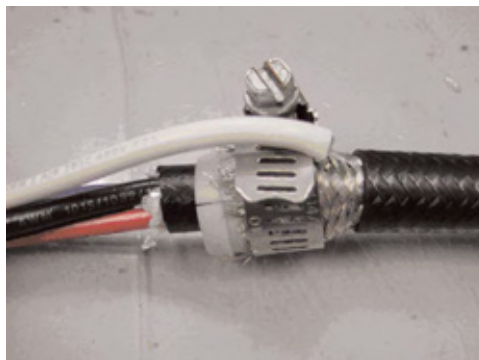
### 8.

- Strip the white neutral conductor (part G) approximately 1".
- Spread the leads out and place it on the internal braid layer as shown.



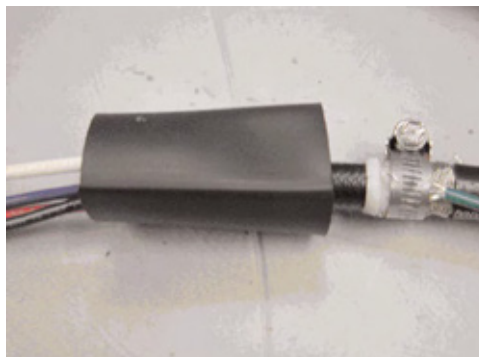
### 10.

- Fold the white neutral wire over the clamp.
- Place a 2.5" heat-shrink tubing (part D) over the neutral termination.
- Heat the heat-shrink over the neutral termination.



### 9.

- Using a conductor clamp (part C), secure the white neutral conductor to the internal braid layer.
- Make sure the clamp is centered on the neutral banding split ring, and tighten with a screwdriver.



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## Wye configuration termination instructions

### 11.

- Fold the ground conductor back over the ground termination and cover both ground and neutral terminations with a 6" heat-shrink (part E).
- Heat the heat-shrink.
- The finished product should resemble the picture shown.





## Delta configuration termination instructions

Note:  
2.5" shrink tubing (part D) and white neutral conductor (part G) are not required for delta configuration.

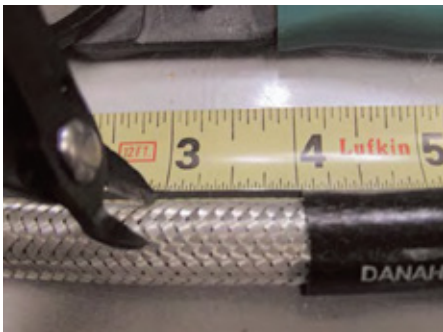
### 1.

- Determine required length to make the connections inside the panel and add 4".
- Cut into the top insulation layer.
- Care should be taken not to damage the top braid layer.
- Cut around the outer layer and remove it from the end of the cable.



### 2.

- Cut into the top braid layer approximately 1" and remove the excess top braid layer.



### 3.

- Take the ground banding split ring (part A) and work it underneath the top braid layer.
- The braid layer should cover as much of the split ring as possible.
- It may be beneficial to use a tool to open the braid layer, making it easier to insert the split ring.



### 4.

- Cut back the second layer of insulation as close to the top insulator as possible.
- Move down 1" and cut around the internal braid layer.
- Remove the excess.





## Delta configuration termination instructions

**5.**

- Slide a neutral banding split ring (part B) underneath the internal braid layer.



**8.**

- Using second conductor clamp (part C), secure the other side of green ground conductor to the internal braid layer.



**6.**

- Strip a length of green ground conductor (part F) sufficient to span the distance of both couplers (approximately 2" worth of stripped wire).



**9.**

- With both couplers securely tightened, the cable should resemble the picture shown.



**7.**

- Using a conductor clamp (part C), secure the green ground conductor to the top braid layer.



**10.**

- Bend the ground conductor back over both couplers and cover both couplers with a 6" heat-shrink tubing (part E).
- Heat the heat-shrink tubing.



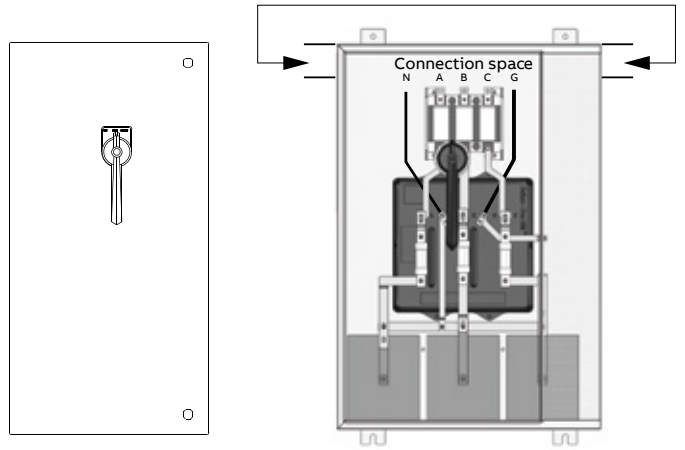
## Delta configuration termination instructions

### 11.

- The finished product should resemble the picture shown.



Recommended cable entry



Top-feed SL3 unit with disconnect shown

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## Warranty

The Warranty Remedy Period for Equipment (excluding Software) shall end fifteen (15) years, or twenty (20) years with MasterPlan, after the original date of purchase. If a nonconformity to the foregoing warranty is discovered in the Equipment during the applicable Warranty Remedy Period, as specified above, under normal and proper use and provided the Equipment has been properly stored, installed, operated and maintained and written notice of such nonconformity is provided to ABB promptly after such discovery and within the applicable Warranty Remedy Period, ABB shall, at its option, either (i) repair or replace the nonconforming portion of the Equipment or (ii) refund the portion of the price applicable to the nonconforming portion of Equipment. If any portion of the Equipment so repaired or replaced fails to conform to the foregoing warranty, and written notice of such nonconformity is provided to ABB promptly after discovery and within the original Warranty Remedy Period applicable to such Equipment or 30 days from completion of such repair, replacement or re-performance, whichever is later, ABB will repair or replace such nonconforming Equipment. The original Warranty Remedy Period shall not otherwise be extended. ABB shall not be responsible for providing temporary power, removal, installation, reimbursement for labor costs or working access to the nonconforming Equipment, including disassembly and re assembly of non-ABB supplied equipment, or for providing transportation to or from any repair facility, or for any other expenses incurred in connection with the repair or replacement, all of which shall be at Purchaser's risk and expense. ABB shall have no obligation hereunder with respect to any Equipment which (i) has been improperly repaired or altered; (ii) has been subjected to misuse, negligence or accident; (iii) has been used in a manner contrary to ABB's instructions; (iv) is comprised of materials provided by or a design specified by Purchaser; or (v) has failed as a result of ordinary wear and tear. Equipment supplied by ABB but

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